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DOCTOR OF PHILOSOPHY

The acquisition and use of Norwegian timber in seventeenth century Scotland, with reference to the principal building works of James Baine, His Majesty's Master Wright

Newland, Katharyne

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Katharyne Newland

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**THE ACQUISITION AND USE OF NORWEGIAN
TIMBER IN SEVENTEENTH CENTURY
SCOTLAND, WITH REFERENCE TO THE
PRINCIPAL BUILDING WORKS OF JAMES
BAINE, HIS MAJESTY'S MASTER WRIGHT**

Katharyne Clare Newland

VOLUME I: TEXT AND FIGURES

A thesis submitted for the degree Doctor of Philosophy

at the University of Dundee, February 2010

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DECLARATION

I, Katharyne Newland, declare that I am the sole author of this thesis. Unless otherwise stated, all references cited have been consulted by myself and the study, of which this thesis is a record, has been carried out by myself. This thesis has not been previously accepted for a higher degree.

.....

I hereby certify that the conditions of ordinance by the University of Dundee have been fulfilled in the preparation of this thesis in order that it may be submitted for the degree of Ph.D. History.

.....

ABSTRACT

This thesis explores the impact of Norwegian timber imports on architecture, building works and their organisation in seventeenth century Scotland. Using a wide variety of Scottish, Danish and Norwegian sources, it first investigates trends in timber imports to Scotland from Norway during the late sixteenth and seventeenth centuries. From this evidence, the passage of timber aboard Scottish vessels can be followed from the forest–farms and sawmills on the west coast of Norway, to Scotland’s east coast ports. Here the timber was stockpiled by merchants or delivered directly to building works for use.

By first establishing what the preferred timber cuts from Norway were, it has been possible to identify a significant change in Scottish building design brought about by the emergence of this new timber source. Essentially, Norwegian timber provided Scottish builders with longer spans for structural work; this presented the opportunity to construct buildings beyond the 20 foot limitations of earlier stone vaulted buildings. Such timbers can be identified in surviving buildings, and through careful analysis of supplementary contracts and accounts the increasing use and significance of timber for buildings works has been recognised.

Wider spans allowed for larger buildings with bigger rooms, all requiring flooring, panelling, doors, windows, shutters, partitions, plaster ceilings, and furniture. For the implementation of these items, the technical knowledge and expertise of wrights was required. This increased use and importance of timber in buildings signifies a probable move away from the long-established prominence of master masons in the traditional hierarchy of the building trades, and towards a rise in the authority and influence of master wrights. An examination of the career and principal building works associated with the king’s wright James Baine supports this evaluation. Examples of his work at Panmure, Glamis and Brechin all show that as the work of wrights became more central to the building process, their power and authority also increased. This development is further evident in the membership figures of the trade incorporations examined, where wrights were the controlling craft.

Furthermore, the building case studies demonstrated a transition in building organisation from a system of direct labour to a system based on contracts, revealing the challenges encountered by its adoption, and also Baine’s emergence as main contractor and master of works. For Baine, the shift in power from masons to wrights allowed him to assume roles previously only undertaken by members of the mason craft, which suggests that for a short time in the late seventeenth century, timber might have replaced stone as the key building material used in Scottish great houses.

ABBREVIATIONS

DSL: Dundee Shipping Lists

NAS: National Archives of Scotland

NRAS: National Register of Archives for Scotland

NTS: National Trust for Scotland

PSAS: Proceedings of Society of Antiquaries of Scotland

RCHAMS: Royal Commission on the Ancient and Historical Monuments of Scotland

RD: Register of Deeds

RPS: Register of the Privy Council of Scotland

SCRAN: Scottish Cultural Resources Network

STR: Sound Toll Records

NOTES

Throughout this thesis, unless indicated otherwise, the monetary unit pounds refers to the pounds Scots, not pounds sterling. References to ell lengths in the text, unless stated otherwise, refer to the Norwegian standard *Sjellanske Alen* used from 1541 to 1683 for all trade goods in Denmark-Norway, and measured 63.3 cm.

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INTRODUCTION

Timber, Construction and Craftsmen

In 1603, at the time of the Union of the Crowns, Scotland was a relatively peaceful and prosperous land with neither military invasions nor civil unrest to hinder expansion. Scotland's largely rural population was still able to provide sufficient foodstuffs, although occasionally climatic conditions resulted in poor harvests which made it necessary to forbid the export of grain for short periods. A stable economy enabled the development of both new and improved harbours on the east coast, and some of the greatest artistic achievements of the period were expressed by new architecture, often non-royal commissions, such as Heriot's Hospital (1627-50) in Edinburgh. Additional building works, more domestic in nature, were also being undertaken by merchants in the burghs and members of the Scottish nobility at their ancestral seats.¹

In 1678 Robert Edward, Minister of Murroes in Angus wrote,

...for the houses in towns, and those of gentlemen in the country, timber is brought from Norway; not because Scotland does not afford wood sufficient to supply the whole kingdom, but because rugged and impassable rocks prevent its being transported from those places where it grows...²

His observation implies that Scottish timber supplies were not always able to meet the demands of builders, which according to Edward was mainly due to the difficulties encountered transporting timber from Scotland's inaccessible forests. This was not a new phenomenon, for during the sixteenth century Scotland had relied increasingly on foreign timber imports as native timber supplies, particularly oak, became depleted.³ By this time, Scotland's timber resources were already considered to have been decimated by James IV's naval ambitions⁴, hence the

¹ G. Donaldson, Scotland: James V –James VII, The Edinburgh History of Scotland Volume 3, (Edinburgh, 1965) pp.251-272.

² Edward, Robert, *A Description of the County of Angus in the year 1678*. (Privately printed from second edition, 1880) p.6.

³ T.C. Smout (ed.), *People and Woods in Scotland: A History*, (Edinburgh, 2003) pp.75-78.

⁴ Norman MacDougall, *James IV*, (Edinburgh, 1989).

increasing reliance on imported timbers. Transportation was not the only difficulty encountered. The longer growing seasons in Scotland, coupled with a warmer and wetter climate resulted in faster growth and pine timber with less density, which was considered generally to be of a poorer quality than imported timbers for building construction and shipbuilding.⁵ To resolve the problems of inadequacy and inaccessibility of native timber, Scotland had long developed a tradition of importing additional timber from the Baltic Sea Region. However, during the sixteenth century, Norway emerged as a new source for building timber. By the seventeenth century demand for this timber in Scotland had increased to such an extent that Norwegian timber was considered as, “essential for the well being of the state.”⁶

The increase in demand for Norwegian timber certainly implies an increase in its use as a building material. What were the consequences of a new timber supply for building works in Scotland? Did this increased use of timber result in any significant changes to either the architecture in Scotland, or to the organisation of the building industry? What were the consequences of a new source of timber for Scottish wrights? Did wrights become more influential than earlier in the building process alongside their patrons?

The peaceful start to the seventeenth century gave way to the Thirty Years War (1618-1648)⁷, which affected most of the Baltic Sea Region directly and Norway by association with Denmark; the Civil Wars in the 1640s; followed by Cromwell’s invasion of Scotland in 1651, devastating much of Scotland’s mercantile fleet.⁸ There then followed the Anglo-Dutch Wars in 1652, 1667 and 1674, severely disrupting trade routes. These interruptions to trade would have affected Scotland’s economic well being, preventing the building of new houses; yet recent

⁵ T.C. Smout, ‘The Norwegian Timber Trade from the Scottish Perspective,’ in *Timber and Trade: Articles on the timber export from the Ryfylke area to Scotland and Holland in the 16th and 17th centuries*, (Fagrapport, nr 1: Lokalhistorisk Stiftelse, 1999), p.40.

⁶ Ibid., pp. 37-55.

⁷ This conflict involved a great deal of diplomatic activity between Scotland and Denmark-Norway, with Scotland providing many tens of thousands of soldiers for Christian IV of Denmark and Gustavus Adolphus of Sweden, see also S. Murdoch, *Britain, Denmark-Norway and the House of Stuart, 1603-1660: A Diplomatic and Military Analysis*, (East Linton, 2003), S. Murdoch, *Scottish Entrepreneurs and Commercial Agents in Scandinavia and the Baltic: Implications at Home and abroad*; S. Murdoch (ed.), ‘Scottish Ambassadors and British Diplomacy 1618-1635’ in *Scotland and the Thirty Years’ War 1618-1648; History of Warfare Volume 6*, (Leiden, 2001) and S. Murdoch and A. Grosjean, *Scotland, Scandinavia and Northern Europe, 1580-1707*, (Aberdeen, 1998 & 1999)

⁸ Eric J. Graham, *A Maritime History of Scotland 1650-1790*, (East Linton, 2002) p.138. Kirkcaldy alone reported losing 94 vessels in the period 1644-1660.

research has shown that extensive country house building continued to be undertaken throughout the seventeenth century.⁹ Following the Restoration many of these building works were undertaken by powerful members of the Scottish nobility, who advanced their building ambitions by means of the lucrative positions they held as members of the Treasury Commission in Scotland.¹⁰

Scotland's Renaissance country houses had been constructed with substantial stone walls, stone vaults, and a few small windows on the ground floor with larger ones on the upper storeys.¹¹ The fundamental factor that had decided this type of building's overall dimensions was the maximum span of a stone barrel vault, which was approximately 20 feet (6 metres).¹² During the seventeenth century many of these former structural elements were re-modelled. Significantly wall thicknesses were reduced to widen rooms, vaults were removed and replaced with timber joisting to carry the floors above, plaster ceilings were introduced, more numerous and larger windows with shutters were inserted, and interiors required panelling.¹³ All these building developments demanded greater quantities of timber components, which could be sourced efficiently from Norway. They also required skilled craftsmen to carry out the work.

It is the career and buildings associated with the wright James Baine that has led to the revaluation of the increased use of timber in buildings in this thesis, in particular the use of wider timber spans for roofing and flooring. These are structures that would have relied on the skills of wrights rather than masons, allowing a shift away from the long-established authority of masons in the building industry. The prominence of Baine and fellow wrights in the records

⁹ Charles Wemyss, 'Some Aspects of Scottish country house construction in the post-restoration period. Patrick Smyth and the building of Methven Castle 1678-1681', M.Phil. dissertation, University of Dundee, 2002. See Chapter 1: 'Was there a great rebuilding of Scottish country houses in the late 17th century?' pp. 4-8, and Charles McKean, *The Scottish Chateau: the country house of Renaissance Scotland* (Stroud, 2001) pp. 240.

¹⁰ Charles Wemyss, 'A Study of Aspiration and Ambition: the Scottish Treasury Commission and its impact upon the development of Scottish Country House Architecture 1667-1682,' Ph.D. thesis, University of Dundee, 2009.

¹¹ Deborah Howard, *Scottish Architecture from the Reformation to the Restoration, 1560-1660* (Edinburgh, 1995) p.53.

¹² Ibid., p.68 and McKean, *Scottish Chateau*, p.66.

¹³ Charles McKean, *The Scottish Chateau: The Country House of Renaissance Scotland*, (Stroud, 2001) p. 35-36, 136, 197-199 and 205. According to McKean wall thicknesses altered from 6 feet plus in the fifteenth century to 4 ½ feet minus in the sixteenth century and to 3 to 3 ½ feet by the seventeenth century see Chapter 2, Footnote 62, p.282.

suggests that for a short time in the late seventeenth century, timber might have replaced stone as the key building material for Scottish great houses. Did Baine subsequently become more powerful and influential than his predecessor wrights? Was he able to assume roles previously only undertaken by members of the mason craft? This thesis will demonstrate that, in the latter part of his career, this may have been the case, and that Baine considered himself capable enough to take on even the role of designer or architect.

Earlier studies of Scotland's timber trade, based mainly on customs' records and port books, have concentrated on economic analyses. In *Scottish Trade on the Eve of the Union 1660-1707*¹⁴ Smout presented a comprehensive examination of Scotland's overseas trade following the Restoration. In this he included the first analysis of the timber trade with Norway, and demonstrated that this trade during the 1660s and 1680s was the main occupation of Scottish shipping at this time, with more modest amounts arriving from the Baltic.¹⁵ Alan Thomson's Ph.D. thesis in 1990, *The Scottish Timber Trade, 1680-1800*,¹⁶ also gave an excellent overview of Scotland's softwood timber trade in the late seventeenth and eighteenth centuries. It is the most comprehensive study of the Scandinavian and Baltic timber trade to date using commercial records: namely Scottish, Norwegian and Danish Sound (Øresund) Toll sources. He used this evidence to assess the changing levels and sources of imports and their subsequent distribution in Scotland. He also provided an examination of trading methods in the eighteenth century, showing how connections established with Scottish merchants abroad played an important role in the trade, as did the increasing importance of ships' captains and the use of Consular officials. He demonstrated that in the eighteenth century, demand for Baltic timber increased, whilst the imports from Norway became less significant, particularly once

¹⁴ T.C. Smout, *Scottish Trade on the Eve of the Union 1660-1707* (Oliver & Boyd Ltd, 1963). See also T.C. Smout, 'Scottish Commercial Factors in the Baltic at the end of the Seventeenth Century', *Scottish Historical Review* 120 (Edinburgh, 1960); 'Some problems of timber supply in later seventeenth century Scotland', *Scottish Forestry* 15 (1960); *Scotland and Europe 1200-1850* (Edinburgh, 1986) and 'The Norwegian Timber Trade from the Scottish Perspective', in *Timber and Trade: Articles on the timber export from the Ryfylke area to Scotland and Holland in the 16th and 17th centuries*, (Fagrapport, nr 1: Lokalhistorisk Stiftelse, 1999).

¹⁵ The gradual shift from Norwegian timber to Baltic timber in the eighteenth century is documented by Alan Thomson in, 'The Scottish Timber Trade, 1680-1800,' Ph.D thesis, University of St. Andrews, 1990.

¹⁶ Ibid.

Gothenburg on the west coast of Sweden had developed into a strong competitor for the production of timber deals.¹⁷ Both Thomson and Smout concluded that building construction was one of the main reasons for importing timbers, but neither of their studies was concerned with how that timber was acquired and then used by the building trades for specific building projects such as houses and royal palaces.¹⁸ Instead, they attempted to assess figures for the volumes of timber involved, and together provide a broad background of the timber trade's economic history from the later seventeenth century onwards. One limitation to this type of study was that early seventeenth century Scottish Customs and Excise sources are either very limited or non-existent; hence Scottish studies tend to use the Restoration or later as a starting point for research. However, the opposite is the case with Norwegian sources, where the earlier 1600s are better documented. So, by examining Norwegian sources it is possible to extend the trade history with Scotland back to the earlier seventeenth century and late sixteenth century.

The most complete study of the timber trade in Norwegian is *Den norske trælasthandels historie*, (The History of the Norwegian Timber Trade) by Alexander Bugge.¹⁹ He examined the timber trade from c.900 - c.1700 using a combination of Norwegian-Danish, Scottish and English primary sources. Of particular relevance is the chapter focusing on *skottetiden* - the Scottish period - Norway's timber trade with Scotland during the sixteenth and early seventeenth centuries.²⁰

Bugge provided a general overview of the numbers of Scottish vessels involved in the trade, the ports they hailed from and their timber cargoes. He also examined the mechanisms of the trade, revealing an increasing political dimension and subsequent restrictions placed on it in both Scotland and Norway.²¹ Bugge also provided an extensive glossary of the terms used between 1400 and 1600, including those used for some of the many timber cuts and products exported to Scotland. The variety of terms quite clearly illustrates the challenges involved when

¹⁷ Ibid., p.192.

¹⁸ Smout, 'The Norwegian Timber Trade from the Scottish Perspective,' p.40

¹⁹ A. Bugge, *Den norske trælasthandels historie*, (Vol.I&II), [The History of the Norwegian Timber Trade] (Skien, 1925).

²⁰ Ibid., pp.205-281.

²¹ Ibid., pp.205-221.

trying to categorise and calculate volumes of timber, not only for present day researchers, but also for those trading at the time: trees, rafters, cabers, spars, garrones, joists, great pieces of oak, knapholt, poles, skowes and wainscot to mention but a few of the descriptions used.²² Importantly for this thesis, Bugge also cited examples where Norwegian timber had been specifically requested for building works in Scotland.²³ Oak was the preferred timber in late sixteenth century Scotland, with softwoods increasingly imported from the beginning of the seventeenth century. This change occurred for political and technological reasons that will be examined in Part One.

Research by the Norwegian historian Arnvid Lillehammer has focused on the trade located in the Stavanger region, on the west coast of Norway, since it was from here that many Scottish skippers, particularly from the east coast, purchased their cargoes.²⁴ His research, based on local court books from 1616 and customs' books from 1601 onwards, gives a valuable insight into the world of *skottehandelen*– the Scottish Trade. Lillehammer details how timber was processed and purchased by Scottish merchants, a trade which depended on the advent of water-driven sawmills in Norway.²⁵

²² Ibid., pp.216-219.

²³ Ibid., pp.205-221.

²⁴ A. Lillehammer, 'Ryfylke Farmers and Scottish Skippers', in D. J. Starkey and M. Hahn-Pedersen (eds.), *Concentration and Dependency: the role of maritime activities in North Sea communities, 1299-1999*, 6th North Sea History Conference: Hull; Esbjerg Fiskeri –og sjøfartsmuseets studieserie; 14 (Esbjerg, 1999) ; 'Sagskurd og trelast i Ryfylke først på 1600-talet', *Frå bygd og by i Rogaland*, [Sawn timber and timber cargo in Ryfylke at the beginning of the 1600s, *From Hamlets and Towns in Rogaland*](1977) ; 'The Scottish-Norwegian Timber Trade in the Stavanger area in the sixteenth and seventeenth centuries', in T.C. Smout (ed.), *Scotland and Europe 1200-1850* (Edinburgh, 1986) ; 'Skottehandelen og Rogaland'[The Scottish Trade and Rogaland], in *Ætt og Heim Lokalhistorisk årbok for Rogaland* (Stavanger,1987) ; 'Boards, Beams and Barrel-hoops: contacts between Scotland and the Stavanger Area in the Seventeenth Century', in G. Simpson(ed.), *Scotland and Scandinavia 800-1800* (Edinburgh, 1990) ; 'Trelastutførsel til Holland, Skottland og Danmark'[Timber Export to Holland, Scotland and Denmark], in Bjørn Slettan(ed.), *Skogsbrukpolitikk og trelasthandel*, Skriftserien/Høgskolen i Agder, (Kristiansand, 1997) ; 'The Timber Trade and the Ryfylke Farmers c.1500-1700', in *Timber and Trade: Articles on the timber export from the Ryfylke area to Scotland and Holland in the 16th and 17th centuries*, (Fagrapport, nr 1: Lokalhistorisk Stiftelse,1999); 'Skottar og hollendarar på Agder- og Rogalandskysten', [Scots and Dutch at Adger and the Rogaland Coast], in *Kontakten mellom Agder og Holland på 1600- og 1700-tallet* [The Contact between Agder and Holland in the 1600s and 1700s] (Flekkefjord, 2001).

²⁵ Lillehammer, 'Sagskurd og trelast i Ryfylke først på 1600-talet', *Frå bygd og by i Rogaland*, [Sawn timber and timber cargo in Ryfylke at the beginning of the 1600s, *From Hamlets and Towns in Rogaland*](1977) ; 'Skottehandelen og Rogaland'[The Scottish Trade and Rogaland], *Ætt og Heim Lokalhistorisk årbok for Rogaland* (Stavanger,1987).

More recent research by Smout has been concerned with Scotland's own woodlands, their management, use, the availability of timber and the decline of suitable building timber.²⁶ *People and the Woods* is essentially an environmental history of trees in Scotland, and provides an insight into how the history of tree cover can be used to understand the past and why it became necessary for Scotland to import timber from abroad. *A History of the Native Woodlands* is of particular interest as it shows that there were some instances of native forests supplying timber for construction work during the seventeenth century.²⁷

Bruce Walker's research into the use of timber in sixteenth century buildings drew attention to the importance of timber as a construction material, and particularly the use of skailie (roofing material that refers to either wooden shingles or slates) and timber cladding in Scotland.²⁸ His paper, *The Use of the Scottish National Dictionaries in the Study of Traditional Construction*, examined the definitions used in the *Dictionary of the Older Scottish Tongue* to describe timbers and the cuts used for building construction, with a focus on timber used in vernacular buildings.²⁹ Of particular interest is the implication that imported timber baulks were often large enough to be processed further by wrights on-site into narrower joists or rafters, sometimes producing up to twelve joists or beams from a single baulk. Evidence for this was found in a series of roofs dated to the seventeenth century at South Queensferry, West Lothian where the number of axe-marked faces in relation to the sawn faces indicated the original size of the timber baulks.³⁰

Another recent addition to timber and building construction research is Thorsten Hanke's M.Phil. dissertation, 'The Development of Roof Carpentry in south east Scotland until

²⁶ Smout (ed.), *People and Woods in Scotland: A History*, (Edinburgh, 2003) and T.C. Smout, Alan R. MacDonald and Fiona Watson, *A History of the Native Woodlands of Scotland, 1500-1920*, (Edinburgh, 2005).

²⁷ A. MacDonald, 'The Navy, Holyrood and Strathcarron in the seventeenth century,' in *History of the Native Woodlands*, pp. 319 – 339.

²⁸ B. Walker, 'The use of 'skailie' in Medieval and post-medieval Scotland,' in *Antiquity* 75 (2001), pp. 163-171; 'The Use of Vertical Timber Cladding in Conjunction with the Platform Frame in Urban Scotland during the Sixteenth Century', *Transactions of the Ancient Monuments Society*, Vol.50 (2006) pp 69-110.

²⁹ B. Walker, 'The use of the Scottish National Dictionaries in the Study of Traditional Construction' in *Perspectives on the Older Scottish Tongue: A Celebration of DOST*, (eds) Christian J. Kay and Margaret A. Mackay, (Edinburgh, 2005), pp. 153-177.

³⁰ *Ibid.*, p.168.

1647.’³¹ He discovered a marked uniformity in the roof structures of this region and concluded that one of the reasons may have been the reliance of wrights on foreign supplies of pre-fabricated timbers. If the majority of Norwegian timber imports were destined for the building industry as Smout and Thomson both claimed, then it follows that the dimensions of this timber would have played a central role in determining not only the dimensions of roof structures, but also the subsequent form and structure of the buildings in other respects.

Current research on timber used in buildings tends to focus on building archaeology and dendro-analysis to date and provenance timbers in situ. This work has mainly been carried out on medieval buildings where the principal construction timbers are commonly a mixture of Scottish and Scandinavian or Baltic oak, although more recently Norwegian oak has been positively identified.³² Eventually, as more data is accumulated for both native and imported timbers, this method of analysis will contribute enormously to our understanding of the use of imported timber and its significance within the building industry.³³

Although the importance of imported timber for building works was acknowledged by Smout and Thomson, it was not a subject investigated by them. Their main interest was the economic history of the timber trade and not its significance for building construction in Scotland. Scandinavian and Baltic timber, though often mentioned as the source of building timbers in documentary sources, has never been the subject of a detailed study.³⁴ There has been no previous examination of the relationship between Scottish wrights, imported timber and

³¹ T. Hanke, ‘The Development of Roof carpentry in south east Scotland until 1647,’ M.Phil. dissertation University of Edinburgh, 2005.

³² Anne Crone and Denis Gallagher, ‘The Late-medieval Roof over the Great Hall in Edinburgh Castle’, in *Medieval Archaeology*, Vol .52, (2008) pp.249-255.

³³ See the following: A. Crone, and R. Fawcett, ‘Dendrochronology, Documents and the Timber Trade: New Evidence for the Building History of Stirling Castle’, in *Medieval Archaeology: Journal for the Society for Medieval Archaeology* Vol.42, (1998); A.G.L. Baillie, *A Slice Through Time*, (London, 1995); A. Crone, ‘The Development of an Early Historic tree-ring chronology for Scotland’, *PSAS* 128 (Edinburgh, 1998); A. Crone, *Dendrochronological Analysis of Floor Joists from Fenton Tower, East Lothian* unpublished report AOC Archaeology 2002; A. Crone, R. Fawcett and M. Hall, ‘A group of late medieval carved wooden panels in Perth Museum and Art Gallery – their provenance and date’, in *Tayside and Fife Archaeological Journal*, Vol.6 (2000); A. Crone, N. Grieve, K. Moore, and D.R Perry, ‘Investigations into an early timber-frame roof in Brechin, Angus,’ in *Tayside and Fife Archaeological Journal* Vol. 10, 2004, pp. 152-165; M. Hall, ‘A Renaissance carved figurative wooden panel from Bridgend, Perth, Scotland,’ in *Tayside and Fife Archaeological Journal*, Vol.11 (2005); C. Mills, ‘Dendrochronology of oak timbers from historic buildings in St.Andrews, Fife’, *Tayside and Fife Archaeological Journal*, Vol.6 (2000).

³⁴ Henry Paton (ed.), *Accounts of the Masters of Works*, Vol.1 1529-1615 (Edinburgh, 1957), J. Imrie and J.G. Dunbar, *Accounts of the Masters of Works*, Vol.2 1616-1649 (Edinburgh, 1982).

its use in buildings. Architectural historians in Scotland have either focused primarily on changes in architectural style and design, or individual architects, builders and owners,³⁵ rather than pursuing an analysis of the materials required and used by craftsmen, as done by Malcolm Airs³⁶ for building works in England. The primary source for his research were the building accounts from a wide range of country houses that included, amongst others, Longleat, Wollaton, Syon, Knole, Bolsover and Temple Newsam. He used the accounts to determine not only how these building works were commissioned and organised, but also to investigate those involved with building them, the patrons, designers, craftsmen and labourers. At the same time he examined the materials required to complete these buildings, looking at how they were acquired and used. This thesis will make a similar use of building contracts and accounts to answer questions on the acquisition and use of timber in Scottish buildings. For example, did the increased use of timber enhance the status and influence of wrights in the building process?

Part One of this thesis will undertake a study of the pre-Restoration trade with the Baltic and Norway. Firstly, by using similar methods to Bugge and Lillehammer in combining Norwegian and Danish sources with Scottish sources, an analysis of the trends for imported timber from the perspective of building construction in Scotland during the late sixteenth to mid-seventeenth century will be undertaken. The Norwegian Nedstrand toll records, the Danish Øresund tolls and the Dundee Shipping Lists will be used to establish how and when Norway became the most important source for timber imports to Scotland and to find out what was imported.³⁷ At the same time any trade restrictions and subsequent reductions in timber being exported from Norway will be examined.

³⁵ Howard, *Scottish Architecture from the Reformation to the Restoration, 1560-1660*; Glendinning, MacInnes, and MacKechnie, *A History of Scottish Architecture from the Renaissance to the Present Day* (Edinburgh, 1997); J. Gifford, *William Adam 1689-1748*, (Edinburgh, 1989); John Dunbar, *Sir William Bruce, 1630-1710* (Scottish Arts Council, 1970).

³⁶ Malcolm Airs, *The Making of the English Country House 1500-1640* (London, 1975), and *The Tudor and Jacobean Country House: A building history*, (Stroud, 1995).

³⁷ Nedstrand Toll Records, Karmsund Folkemuseet; N.E.Bang and K.Korst,(eds.) *Tabeller over Skibsfart og Varetransport gennem Øresund 1497-1660* [*Tables of Shipping and Goods through Øresund 1497-1660*](Copenhagen,1906, 1922, 1933) and N.E.Bang and K.Korst,(eds.) *Tabeller over Skibsfart og*

Secondly, the reasons for Norway's importance as the main supplier of foreign timber to Scotland will be considered. Was it quite simply due to geographical proximity and historical associations, or were there other economic or commercial factors that need to be taken into account? To what degree did technological developments present Norway with an advantage over its competitors in other timber producing areas? For example, the appearance of water and wind driven sawmills in Europe in the sixteenth century was a significant advance in harnessing power that could be used for industrial production. In the Netherlands, windmills proved crucial to the country's expanding economy and were used to press oilseeds, pulp paper, cut tobacco, prepare paint, process hemp and saw timber.³⁸ Did Norway or Scotland have the necessary resources to establish similar mechanised sawmills? If they did, what were the consequences for the craftsmen; the wrights, carpenters and sawyers, who worked with timber and building construction?

Thirdly, to add to our understanding of the production and purchase of timber, additional documentary sources will be used to establish the places and people involved with the Norwegian timber trade. Typical cargoes from this period will be examined to assess the terminology used and to determine what the favoured timber cuts were used for in Scottish buildings. Further research at surviving buildings from the period will be undertaken to determine if any evidence of these timber cuts can still be found *in situ*. The significance of importing standardised timbers for those working in the building trade will be examined, in particular the wrights, carpenters and sawyers. Were there advantages to importing pre-shaped timbers for building construction? Were structural components ever commissioned directly from Norway? As their skills developed to accommodate the increased use of timber in buildings, were wrights able to assume a more significant role amongst the other building trades? Were such changes driven by trends in architecture where timber was a more significant component?

Varetransport gennem Øresund 1661-1783 [Tables of Shipping and Goods through Øresund 1661-1783] (Copenhagen, 1930-45); City of Dundee Archives: Dundee Shipping Lists - Access database (CD 2005)

³⁸ Jan de Vries and Ad van der Woude, *First Modern Economy: success, failure and perseverance of the Dutch economy, 1500-1815* (Cambridge, 1997) p.301.

When compared with other crafts such as masons, very little is known about the organisation of wrights in seventeenth century Scotland.³⁹ However, the increase in the use of timber in building works naturally led to a greater demand for wright work and as a result enhanced their influence and perhaps standing within the building trades. Much is known about their English counterparts, and woodworkers from the medieval period onwards have been examined by Salzman and Munby.⁴⁰ Airs also investigated the organisation of English craftsmen, including carpenters and joiners, required for high status building works undertaken in the sixteenth and early seventeenth centuries.⁴¹ Wrights are mentioned briefly, however, by David Stevenson in his books on the history of freemasonry in Scotland, where we learn that masons and wrights were sometimes mutually affiliated.⁴² Laura Petznick's Ph.D. thesis, *The Wrights Incorporation of Perth Minute Books 1700 to 1840: a transcription*⁴³ provides details of a wrights' incorporation in the eighteenth century and focuses primarily on the furniture makers. Sebastian Pryke's Ph.D. thesis, *The Eighteenth Century Furniture Trade in Edinburgh*⁴⁴, also focused on the furniture trade in the eighteenth century, but looked at the organisation of the Incorporation of Mary's Chapel in Edinburgh, whose membership included wrights and other trades associated with the building industry. The *Dictionary of Edinburgh Wrights and Furniture makers, 1660-1840* compiled by Francis Bamford, again primarily concerned with furniture makers, is a comprehensive account of all the known wrights working

³⁹ R.S. Mylne, *The Master Masons to the Crown of Scotland and their Works* (Edinburgh, 1893).

D. Stevenson, *The First Freemasons: Scotland's Early Lodges and their Members*, (Aberdeen, 1988) and *The origins of Freemasonry: Scotland's Century 1590-1710* (Cambridge, 1988).

⁴⁰ L.F. Salzman, *Building in England down to 1540, a documentary history* (Oxford, 1952) and Julian Munby, 'Wood', in *English Medieval Industries: craftsmen techniques, products*, John Blair and Nigel Ramsay (eds.), (London, 1991) pp379-405.

⁴¹ Airs, *The Tudor and Jacobean Country House*, and *The Making of the English Country House 1500-1640*.

⁴² D. Stevenson, *The First Freemasons: Scotland's Early Lodges and their Members*, (Aberdeen, 1988) p.12 and *The Origins of Freemasonry: Scotland's Century 1590-1710* (Cambridge, 1988). In Edinburgh, the Incorporation of Masons and Wrights dated from 1475, and the Incorporation of Wrights and Coopers of Canongate from 1612 demonstrate this.

⁴³ Laura Ware Stone Petznick, 'The Wrights Incorporation of Perth Minute Books 1700 to 1840: a transcription', Ph.D. thesis, University of St. Andrews, 1999.

⁴⁴ Pryke, Sebastian, 'The Eighteenth Century Furniture Trade in Edinburgh', Ph.D. thesis, University of St. Andrews, 1995.

in Edinburgh, with short biographies that contain details of their masters, apprentices and general careers.⁴⁵

Apart from these examples, there have been no other studies of wrights' organisations, their training, skills and contribution to building works in seventeenth century Scotland.⁴⁶ Therefore Part Two will examine wrights, their organisation and development through the working life and career of the Edinburgh master wright and burgess James Baine, who rapidly attained the most prestigious honour for a member of his craft when he was made His Majesty's Master Wright in the 1670s. The documentary sources relating to the working life of Baine, who was also a timber merchant, provide an excellent means to further our understanding of wrights operating in the seventeenth century.

Part Two will first examine the Wrights and Masons Incorporation of Mary's Chapel in Edinburgh to understand how wrights were trained and regulated, and the numbers of wrights working in Edinburgh during the later seventeenth century will be compared with other building trades. Secondly, Baine's working life will be examined, from his apprenticeship, his employment as a main contractor and supplier, to his early success working as His Majesty's Master Wright at Holyrood and the financial consequences of that position. Baine's client networks and associations with fellow craftsmen involved in the building trade will be studied to determine the implications for the execution and completion of building works in post-Restoration Scotland.⁴⁷ As well as being a master wright, Baine was also a timber merchant with substantial stocks at the Timber Bush in Leith, where imported timber cargoes were landed and stored. How significant this was for his work as a wright and principal contractor will be studied for any evidence of 'vertical forward integration' in the organisation of his business

⁴⁵ Francis Bamford, *Dictionary of Edinburgh Wrights and Furniture Makers, 1660-1840* (London, 1983).

⁴⁶ A.J. Warden, *The Burgh Laws of Dundee, with the history, statutes, and proceedings of the Guild of Merchants and Fraternitie of Craftsmen* (Dundee, 1872) pp.584-594 and A. Smith, *The Three United Trades of Dundee: Masons, Wrights and Slaters*, Abertay Historical Society Publication No.26 (Dundee, 1987) contain some useful information regarding the organisation of Dundee's wrights during the seventeenth century.

⁴⁷ Assorted documents from National Archives of Scotland including Register of Deeds, Exchequer Records and various papers from Gifts and Deposits, *The Records of the Parliaments of Scotland to 1707* (St. Andrews, 2007-2009) and Edinburgh City Archives: Incorporation of Wrights and Masons of Edinburgh (Mary's Chapel) 1669-1709: SL34.

interests. This process, first observed by Alan Thomson, was detected as the early signs of a more complex or streamlined business organisation in the Glasgow building firm of Bogle and Scott in the 1770s.⁴⁸ It concerns improved co-ordination to increase efficiency,⁴⁹ and this company specialised in importing timber to be directly used in the building trade. As a timber merchant and master wright, did Baine adopt a comparable business model in the seventeenth century? Finally, the thesis will consider the extent to which Baine's business interests were dependent on his patrons and associates in the building industry, and how this related to the collapse of his business and eventual bankruptcy.

In order to better understand Baine's role within the building trade and the use of imported timber, Part Three will examine the organisation and completion of building works at three of the principal buildings where he was employed. Using documents from the Dalhousie Muniments and the Strathmore Muniments, the building works undertaken at Panmure, Glamis and Brechin for the earls of Panmure and Strathmore will be reviewed.⁵⁰ As well as using these written documents, several other types of evidence will be investigated. As suggested by Maurice Howard⁵¹ and demonstrated in *The Vyne: a Tudor House revealed*, the analysis of physical remains, visual documentation, the siting of the building, its layout, and the motives for its construction are all important factors for furthering our understanding of individual buildings.⁵² A similar approach will be adopted in each of the case studies examined, where Baine was employed on the basis of his reputation and resources. The latter was involved initially as master wright and later as main contractor where he was responsible for the provision of building materials, craftsmen (other than wrights) and overseeing the building

⁴⁸ Thomson, 'The Scottish Timber Trade, 1680-1800.'

⁴⁹ "inclusion in the same firm of 'downstream' activities which use or distribute the products of an 'upstream' activity...Forward integration may be adopted to improve efficiency by better co-ordination of the different levels of production, or to exploit monopolistic advantages at one level to reduce competition at another." *A Dictionary of Economics*. John Black. (Oxford, 2002). *Oxford Reference Online*. Oxford University Press, Dundee University. Accessed 3 May 2004

⁵⁰ NAS, GD45 Dalhousie Muniments. Dundee University Archives, Strathmore Muniments NRA 885.

⁵¹ Maurice Howard, 'The architectural and social history of the Tudor and Jacobean great house: new materials and new methods,' in Airds(ed), 'The Tudor and Jacobean Great House' in *Proceedings of a conference held at The University of Oxford, January 1994*, (Oxford, 1994) pp.3 -7.

⁵² M.Howard and E.Wilson, *The Vyne: a Tudor house revealed* (London, 2003).

works, with either some or all of these tasks being specified by written contracts with his patrons.

Individual studies of Panmure, Glamis and Brechin - where Baine worked from the late 1660s to 1690s - will examine the design and development of each building, the acquisition of timber and its subsequent use at each house. A study of the contracts, their specifications and later disputes over work undertaken 'not by contract' will be examined to understand how such building operations were organised. In the seventeenth century, any building scheme for a great house would have required several kinds of timber for different purposes. There was seldom enough good quality timber of suitable dimensions available locally for such varied work, and so it was purchased either via a timber merchant or imported from abroad. To extend our understanding of the acquisition and use of such timber, the documentary evidence from these three buildings will be used to identify what type of timber and timber cuts were purchased, their provenance, and who purchased them.

As Dunbar and Davies in *Some Late Seventeenth Century Building Contracts*,⁵³ and both Aird and M. Howard have shown in their books and research,⁵⁴ documentary sources can provide valuable insights into the building industry, its working practices and organisation. Dunbar's earlier paper, *The Organisation of the Building Industry in Scotland during the 17th Century*, outlined the general move away from a direct labour system - where the builder/owner undertook the control of building operations himself - towards a contract system.⁵⁵ He showed that in the seventeenth century most builders of Scotland's high status houses began to employ a master of works or one main contractor responsible for the administration of the building work. This role was frequently undertaken by a master mason, for example William Lukup who was employed by the duke of Queensberry as Master of Works at Drumlanrig in the 1680s.⁵⁶ Lukup

⁵³ J.G. Dunbar and K. Davies, (eds.), 'Some Late Seventeenth Century Building Contracts', in *Scottish History Society Miscellany XI* (Edinburgh, 1990) pp. 269-323.

⁵⁴ Aird, *The Tudor and Jacobean Country House*, and *The Making of the English Country House 1500-1640*; M. Howard, *The building of Elizabethan and Jacobean England* (New Haven and London, 2007).

⁵⁵ J. Dunbar, 'The Organisation of the Building Industry in Scotland during the 17th Century', in *Building Construction in Scotland: Some Historical & Regional Aspects*, Scottish Vernacular Buildings Working Group (Edinburgh and Dundee, 1976), p.9.

⁵⁶ Dunbar and Davies, 'Some Late Seventeenth Century Building Contracts' pp. 315-316.

was then responsible for organising other tradesmen, supplying materials and keeping the accounts for Queensberry.

The building's design was often undertaken by the client working together with the master craftsman in charge of the building operations. The patron adopted the role of designer and the craftsman that of executor. Again in most cases, the master craftsman was usually a master mason; he produced the plans or *draft* and sometimes a 'pasteboard' model for his client and supervised the tradesmen on site.⁵⁷ In 1677 Thomas Wilkie, a successful and wealthy master mason from Edinburgh, was employed by Sir John Falconer, Master of his Majesty's Mint, as the mason-contractor for Gallery House in Angus. Wilkie had responsibility for the entire building operation, including the provision of most of the building materials, which would have required considerable capital.⁵⁸ In the seventeenth century Scotland the term 'architector' was often used in connection with these men. Charles McKean examined the seventeenth century (and earlier) perception of architect to develop our understanding of its definition and use in Scotland.⁵⁹ He argued that if an architect was described as someone who had the skill to visualize an idea in three dimensions, sketch it out, and supervise the building works then there were clearly individuals who were capable of such work prior to the emergence of Scotland's first recognised 'gentleman architect' Sir William Bruce; one example being Sir James Hamilton of Finnart (d.1540) who directed and paid for the works at Stirling Castle 1538-40.⁶⁰ Another example was Tobias Bauchop, a master mason from Alloa who worked with Bruce and was referred to as architect by his clients for his work on the steeple at Dumfries Town House.⁶¹ It was not only master masons who took on the role of main contractor and designer. Sir James Murray of Kilbaberton (d.1634) was a successful master wright and gunner, and became the King's Master of Works under James VI and Charles I. He was concerned with building works

⁵⁷ D. Howard, *Scottish Architecture from the Reformation to the Restoration, 1560-1660*, p.213.

⁵⁸ Dunbar, 'Organisation of the Building Industry in Scotland...' p.10 and Dunbar and Davies, 'Some Late Seventeenth Century Building Contracts' pp. 295-299.

⁵⁹ McKean, *The Scottish Chateau*, p.267-275.

⁶⁰ Ibid., p.270-271.

⁶¹ Ibid., p.267-8.

for the Crown at Linlithgow and Edinburgh, becoming one of the earliest examples of a master craftsman referred to by contemporaries as royal 'architect'.⁶²

Baine's changing role and relationship with his patrons, the earls of Panmure and Strathmore, will be examined in connection with his wider works for the Crown and his role as His Majesty's Master Wright. Finally his early success and progress from master wright to principal contractor will be assessed to determine whether towards the end of his career Baine became overly ambitious, in the end going beyond his abilities and resources.

⁶² Aonghus MacKechnie, 'Scots Court Architecture of the early 17th century' Ph.D. thesis, University of Edinburgh, 1993.

GLOSSARY

This glossary provides some definitions and discussion of the terms encountered in the course of this study examining timber, its acquisition and use by wrights in Scotland. For the seventeenth century timber trade, the main concepts requiring definition are units of measurement, currency and descriptions of timber cuts. Some preliminary explanations of the descriptive terms used in Scottish and Norwegian sources are also provided.

Units of measurement: dimensions and volumes

The linear units of measurement generally used in the Norwegian toll books for different types of timber included ells, feet, palms, and inches. Firewood was always measured by volume in *favn* - fathoms. As well as these specific units, additional terms such as long, short, single and double were used to refer to the thickness of timbers.

Ell: the most frequently used term in Norwegian toll records used to measure planks and beams. The origins of a Norwegian ell stemmed from the practice of taking a measurement of the forearm from elbow to fingertips. Prior to 1541 there were many different local variants. It was not standardised until the *Sjellanske Alen* was introduced, used from 1541 to 1683 for all trade goods in Denmark-Norway, which measured 63.3 cm.⁶³ The local town halls each had their own version of the *Sjellanske Alen*, on the reverse of which was the equivalent local measurement. On 1 May 1683 a new ell was introduced in Norway, which was the equivalent of two Rhineland feet and equalled 62.8cm. This continued with a minute change in 1884, until the adoption of the metric system in 1887.

⁶³ All measurements are based on the official Norwegian measurements including the *Sjellanske Alen* used 1541-1683, and other measurements 1683-1887. <http://www.maritimt.net/arkforsk/norskem.htm> Norsk Forlishistorisk Forening 17.09.2006.

Norwegian Ell	63.3 cm	25 inches	1541-1683
Scots Ell	94 cm	37 inches	1661 (Edinburgh 1624)
Dutch Ell	58.7-69.4 cm	23- 27 inches	Hague Ell 1725 (69.4)
Flemish Ell	68.6 cm	27 inches	
Polish Ell	78 cm	31 inches	
English Ell	114 cm	45 inches	

Figure 1: Different ell lengths and their metric equivalents.

The ell had other definitions elsewhere and a Scots ell (37 inches) was much larger at 94cm (Figure 1). This became the national standard in 1661, although it was first recognised as the Edinburgh standard in 1624.⁶⁴ It measured one inch longer than an English Yard, a practice which may have developed from the English cloth trade where a purchaser was given an extra inch in each yard measured, by using a thumb to separate each subsequent yard. However, an English ell was longer again at 45 inches.⁶⁵ A Dutch ell was the distance of the inside of the arm (*i.e.* the distance from the armpit to the tip of the fingers). The exact length of the Dutch ell varied from town to town and dimensions of 58.7 to 69.4 cm have been recorded. It was not until 1725 that the *Hague* ell of 69.4 cm was fixed as the national standard for tax purposes.⁶⁶ The Flemish ell was slightly shorter at 68.6cm, and Polish ells longer at 78cm.⁶⁷ Such variation in standard measurements must have increased the possibility of mistakes when ordering goods from abroad, as was the case when Sir William Bruce ordered leather hangings in the 1670s only to find that they were too short because he had taken the measurements in Scottish ells, but they were ordered and made in the Netherlands.⁶⁸ After the 1650s the descriptive terms used in the Norwegian toll records and the Dundee Shipping Lists rarely

⁶⁴ R.D.Connor, A.D.C.Simpson, and A.D.Morrison-Low (ed), *Weights and Measures in Scotland: A European Perspective*, (East Linton, 2004) p. 35; Alexander Huntar, 'A Treatise of Weights, Metts and Measures of Scotland, (1624), pp4-5 reproduced in Louise B. Taylor, *Aberdeen Shore Work Accounts 1596-1670*, (Aberdeen University Press, 1972) p621.

⁶⁵ Ibid., Connor, Simpson, and Morrison-Low (ed), *Weights and Measures in Scotland*, p.37.

⁶⁶ Wikipedia contributors, "Dutch units of measurement," *Wikipedia, The Free Encyclopedia*, <http://en.wikipedia.org/w/index>. (accessed May 5, 2008).

⁶⁷ Wikipedia contributors, "Ell," *Wikipedia, The Free Encyclopedia*, <http://en.wikipedia.org/w/index>. (accessed May 5, 2008).

⁶⁸ Pers. Comm. Charles Wemyss re: William Bruce ordering leather hangings that were too short because they were made using Dutch ells, not Scots ells.

mention any dimensions. Figure 2 provides a summary of metric equivalents of up to 20 ells for Norwegian and Scots ells; it also includes the (approximate) equivalent measurements in feet from 6 to 12 ells.

No.	Norwegian		Scottish	
	(metres)	(feet)	(metres)	(feet)
1	0.63		0.94	
2	1.27		1.88	
3	1.9		2.82	
4	2.53		3.76	
5	3.17		4.7	
6	3.8	12'6"	5.64	19'
7	4.43	14'	6.58	21'
8	5.06	16'	7.52	24'6"
9	5.7	18'	8.46	28'
10	6.33	20'6"	9.4	31'
11	6.96	23'	10.34	34'
12	7.6	26'	11.28	37'
13	8.23		12.22	
14	8.86		13.16	
15	9.5		14.1	
16	10.13		15.04	
17	10.76		15.98	
18	11.39		16.92	
19	12.03		17.86	
20	12.66		18.8	

Figure 2: A summary of Norwegian and Scottish ells with their metric equivalents, and also equivalent measurements in feet from 6 to 12 ells.

Favn: A Danish-Norwegian unit of volume, which directly translated means fathom.⁶⁹ In the context of the timber trade it referred to a unit of volume of firewood sold, and is still used to the present day for firewood. The *favn* was derived by multiplying 1 ell x 1 fathom (3 ells) x 1 fathom amounting to 2.23 m³. The toll records from Nedstrand in Ryfylke (Norway) frequently mention fathoms of firewood, and virtually all Scottish ships carried some back with their timber cargoes where it was probably useful as ‘stowage’ for filling up any remaining space in the ship’s hold.⁷⁰

⁶⁹ In Scotland a fathom was used to measure peat and equalled a cube of 6 ft square. See Connor, Simpson, and Morrison-Low (ed), *Weights and Measures in Scotland*, p. 758.

⁷⁰ Smout, *The Norwegian Timber Trade from the Scottish Perspective*, Timber and Trade, p.43.

Foot: one foot equalled twelve inches (31.4 cm).⁷¹

Glazier's foot: equal to one hundredth part of the Scots chain, or one link which varied between eight and nine inches (20.8 – 23.4 cm) in the seventeenth century.⁷²

Inch: Scottish and English inches were identical (2.6 cm).

Last: a ships' capacity, where one last equalled two tons. For products of similar density, such as timber, a last can also be considered as a unit of volume.

Palme: based on the width of the palm of the hand and was used for measuring the circumference of untrimmed timber, masts and small spars (one palme = 8.86 cm). Examples are “smaa spirer paa 5, 6, och 7 pallmer...”, small spars of five (44cm), six (53cm), and seven (62cm) palms.⁷³

Currency

Unless stated otherwise, the Scots pound is used throughout this work.

Riksdaler (Norwegian), Riks dollar: During the political union with Denmark, Norway issued two different currencies, the *rigsdaler courant* and the *rigsdaler specie*, with 96 *skilling* to the *rigsdaler courant* and 120 *skilling* to the *rigsdaler specie*.

Scots pound: one pound Scots equalled 1s 8d sterling

Scots merk: 1 merk equalled two thirds of a Scots pound i.e. 13s 4d which was the equivalent to 1s 1d in sterling.

Sterling: one pound sterling equalled 12 pounds Scots.

⁷¹ Based on Scottish measurements from 1661 and their metric equivalents from *SCAN Weights and Measures Guide*: www.scan.org.uk/measures/distance.asp

⁷² Connor, Simpson, and Morrison-Low (ed), *Weights and Measures in Scotland*, pp. 47-48 and p.758.

⁷³ Bugge, *Den norske trælastshandels historie*, p89.

Timber products

The following terms relate to processed timbers in Scotland and Norway, the exception being ‘undressed tree’, that had neither been squared nor had the bark removed. In all other cases, any known dimensions of specific timber products have been included, although no contemporary seventeenth century documentary references were found for Scottish dimensions of boards and planks.

Axle tree, aix-tree: an axle for a cart or carriage.⁷⁴

Baandstager (Norwegian), Steingis: barrel hoops or bands probably mainly made from hazel.

Board, bords, sagbord (Norwegian): sawn boards, ‘a piece of timber of undefined length, more than four inches in breadth, and not more than two inches and a half thickness...’⁷⁵

According to the Oxford English Dictionary (OED) a board is technically distinguished from a plank by its thinness, ‘...it ought to be more than 4 inches in width, and not more than 2½ in thickness, but is generally much thinner....’⁷⁶

Estland bords, eastland boards: cloven timber boards coming from the Baltic Sea region. These were probably quite thin boards and were recorded in the *Treasurer’s Accounts* as being used for doors, windows and panelled ceilings.⁷⁷

Swadin bords, Sweden boards: cloven timber boards coming from Swedish ports of Stockholm or Gothenburg.

Begerholt, bekerholt: pieces of aspen or lime wood used for woodturning to make miscellaneous containers.⁷⁸

Bjelkar, bielcker (Norwegian): squared **beams** or **baulks** of between seven and 16 ells in length. Pine beams or baulks were usually either twelve or nine Norwegian ells long, and approximately eight inches square.⁷⁹

⁷⁴ *The Concise Scots Dictionary* (Chambers, 1996) p.9.

⁷⁵ J.Gwilt, *An Encyclopædia of Architecture: Historical, Theoretical and Practical*, (London, 1867 edition), p. 1159.

⁷⁶ *Oxford English Dictionary Online*, (Oxford University Press, Second Edition 1989). Accessed 18 May 2009.

⁷⁷ Smout., MacDonald and Watson, *A History of the Native Woodlands of Scotland, 1500-1920* (Edinburgh University Press, 2005) p.75.

⁷⁸ Bugge, *Den norske trælastshandels historie*, p.339.

Burnewood: firewood, usually birch shipped from Norway.

Corbillis: corbel, usually piece of oak timber used in building to support a super incumbent weight.⁸⁰

Crooked timber, crookit knees, crwket tymber, cruikit timmer: naturally grown right-angled pieces of timber mainly used in shipbuilding, but also as supports in roof construction as roof trusses or principals.⁸¹

Collar beam, collar-baulk: horizontal timber beam, acting as a tie, fixed to a couple, upper tie.⁸²

Couple: (a) rafter, (b) one of pair of sloping rafters forming roof sometimes referred to as couple-leg, (c) as (b) with the addition of horizontal tie connecting extreme lower ends of rafters, simple truss, (d) as (b) with the addition of timber 'legs' which either stand on comparatively low wallhead or are carried down through wall thickness to secure anchorage in the ground.⁸³

Dails, deal, sagdeler and deler (Norwegian): sawn planks.⁸⁴

...the small thickness of timber into which a piece of any sort is cut up; but the term is now...restricted in its significance to the wood of the fir tree cut up into thicknesses in the countries whence deals are imported, viz, Christiana, Dantzic, &c. Their usual thickness is three inches, and their width nine. They are purchased by the hundred which contains 120 deals, be their thickness what it may, reduced by calculation to a standard thickness of one inch and a half and to a length of twelve feet. Whole deal is that which is one inch and a quarter thick, and slit deal is half that thickness.⁸⁵

Norwegian seventeenth century regulations relating to dimensions of planks stated the minimum width of log allowed to be sawn was the "seven board baulk" *i.e.* at least seven boards were to be sawn from each undressed log. Drammen was the leading exporter of planks in late seventeenth century Norway, and an ordinary squared Drammen's board measured ten or twelve

⁷⁹ Brandal, "Skog, sager og trelasthandel", p87.

⁸⁰ G. Pride, *Glossary Scottish Building* (Famedram Publishers Ltd, 1975) p.33 and *Oxford English Dictionary Online* 2008, accessed 30 June 2009.

⁸¹ *Ibid.*, p. 34.

⁸² *Ibid.*, p.32.

⁸³ *Ibid.*, p.33.

⁸⁴ *Ibid.*, p.35.

⁸⁵ Gwilt, *Encyclopædia of Architecture*, p. 1186.

feet in length, at least nine inches broad and 1½ inches thick,⁸⁶ and each log from here produced on average six to eight planks. Kristiania, the second largest exporter of planks, produced its own characteristic sawn timbers that were notably thinner than those from other areas. Here, about ten planks could be sawn from a one foot diameter log as opposed to the six to seven planks produced at Fredrikshald, Fredrikstad and Skien in the same period.⁸⁷ Boards produced at Hjelmeland in Ryfylke were on average, ‘8 feet long, 8 inches wide and 1 inch thick....’⁸⁸ The *Danmarksdele* - Danish deals were approximately twice as thick (at 5 inches) as the standard sawn planks known as *Hollandsdele* – Dutch deals (See summary Figure 3). At Sailors’ Walk in Kirkcaldy, pine ceiling boards still *in situ* and dated to the mid-seventeenth century were recorded in varying widths of between seven and nine inches, with a thickness of one inch.⁸⁹

Boards/deals	Length	Breadth	Thickness
Board	?	4inches	2 ½ inches
Deal (Kristiana and Danzig)	12 feet	9 inches	1½ -3 inches
Ryfylke	8 feet	8 inches	1 inch
Drammen board	10-12 feet	9inches	1½ inches
Danish deals			5 inches
Dutch deals			2 ½ inches
Sailors’ Walk, Kirkcaldy		7, 7½, 8, 9 inches	1 inch

Figure 3: A summary of the recorded dimensions of boards and deals.

Single dailis, merchand dailis, squared planking: deals or planks, dimensions unknown.

Drunton: *e.g.* “Drunton deals”, referring to a source in Trondheim, Norway.

Eik (Norwegian), aiken, aiken tymer, *quercus*: oak timber.

Estland: The Duchy of Estonia (Swedish: *Hertigdömet Estland*) or *Swedish Estonia* (Swedish: *Svenska Estland*) was a dominion of Swedish Empire from 1561 until 1721. *Estland* is the

⁸⁶ Schreiner: ‘Det nye sagbruk’, [The New Sawmills] pp.115-138.

⁸⁷ Ibid., pp.115-138.

⁸⁸ Brandal, “Skog, sager og trelasthandel”, p87.

⁸⁹ Addyman Archaeology, Sailor’s Walk, 443-449 High Street, Kirkcaldy, Fife: Analytical assessment and historic building survey for the National Trust for Scotland, (interim draft: 12 June 2006).

modern name for Estonia in German, Swedish, Danish, Norwegian, Dutch and some other Germanic languages.⁹⁰

Furu, fürre (Norwegian), *pinus sylvestris*: pine timber, sometimes called Scots Pine, red fir, and yellow fir, and one of the most durable of the pines. It has also been known as Memel, Danzig and Riga fir. It grew in Norway, Sweden, Russia, and in other parts of Northern Europe. It is also a native of the Highlands of Scotland.⁹¹

Færing (Norwegian), fourern (Shetland): Norwegian built rowing boat with four oars.⁹²

Garron, garroun: a length of square timber, beam. Also **garronis**, small pieces of cross-timber used in roof construction.⁹³

Gran (Norwegian), *picea abies*: also known as Norway Spruce. Today it grows throughout Europe: from Norway in the northwest to Poland and eastwards: in the mountains of central Europe; southwest to the western end of the Alps, and southeast in the Carpathians and Balkans to the extreme north of Greece. The northern limit is in the arctic, just north of 70°N in Norway.⁹⁴

Geasts, geist, jeasts, joists: timber beams that rest on the walls of a building and on to which the boards of a floor or lathes of a ceiling are fixed.

Hjeltland, hjaltland: Norwegian name for Shetland Islands.

Hjeltesperrer (Norwegian): Shetland spars, *i.e.* spars or poles destined for Shetland.

Huggenbord (Norwegian), cuttet tymbor, split timber: timber which had not been sawn, but cut by hand with an axe or split. Also refers to timber which had either been squared off with an axe or adze, or trimmed to specific dimensions.

Juffers: 'An obsolete term for pieces of timber four or five inches square'.⁹⁵ It may have originated from shipbuilding and was used in Dutch to describe pieces of timber which are hammered in. 'Double' and 'single' were used to refer to the thickness of *juffers*. Since the word

⁹⁰ http://en.wikipedia.org/wiki/Swedish_Estonia, accessed 25 October 2009.

⁹¹ Thomas Tredgold, *Elementary principles of carpentry and a treatise on joinery*, (1820) p.515.

⁹² A. Thowsen, 'The Norwegian Export of Boats to Shetland, and its influence upon Shetland boat building and usage,' *Sjøfarts Historisk Årbok* [Maritime History Yearbook] (Bergen, 1968).

⁹³ Pride, *Glossary Scottish Building*, p.43.

⁹⁴ Wikipedia, Norway Spruce. Accessed 4 July 2009.

⁹⁵ Gwilt, *Encyclopædia of Architecture*, p.1215; and Bugge, *Den norske trælasthandels historie* p.340.

appears in Gwilt's, *Encyclopedia of Architecture*, it suggests that at some point the term *juffers* was used by the building trades, although its specific application is unknown.

Kapper/kaper-sparrer (Norwegian), Keper (Dutch): a roof spar, similar to the Scots caber.

The *keper* may refer to cut timbers rather than sawn.⁹⁶

klapholt, klappholz , knappald, knaphold, knapbord, knapboard, knaphard, knapholt, knappet, (Norwegian, German and Scots), also clapboard: frequently defined as 'small sizes of split oak used for wainscot...although strictly cut and squared planking which was not so good quality as wainscot,'⁹⁷ also defined as oak staves used in making casks or barrels, but not used exclusively for this purpose. It came mainly from Königsberg, Danzig and Riga.⁹⁸ Bugge described it as 'wooden staves not more than three inches thick or over seven inches broad and not more than 63 inches long.'⁹⁹ A decree from *Norges Rigs Registranter* dated 9 April 1643 described it as *Knapholzømmmer af fyr*, (which directly translated means *knapholt i.e. clapboard* timber of fir (pine) and *Fyr-knapholt stave* meaning pine clapboard staves.¹⁰⁰ The same material is described elsewhere as, 'Clapholt - a type of oak timber, imported from Norway and very like Dutch wainscot.'¹⁰¹ This lack of clarity regarding the definition of *klapholt* and *knapholt* means that when the term is used its meaning has to be considered within the full context of the original document or source.

Krumholdt (Norwegian): crooked timber. Specific examples are described as five ells long and five inches thick, probably referring to crooked knees.¹⁰²

Lekters (Norwegian): lathes or battens used for slating, tiling and plastering.¹⁰³

Pipeholt: used for making wine pipes.

Post: an upright timber, dimensions unknown.¹⁰⁴

⁹⁶ *Ibid* Bugge, p. 341. *Norges Rigs Registranter*, Vol.VIII, p272.

⁹⁷ Pride, *Glossary Scottish Building*, p.50; *The Concise Scots Dictionary*, (Chambers, 1996), p.346.

⁹⁸ A. Attman, *The Russian and Polish markets in international trade, 1500-1650*, (Gothenburg, 1973) p.17.

⁹⁹ Translated from Bugge, *Den norske trælasthandels historie* p.340.

¹⁰⁰ *Ibid.*, p.341; *Norges Rigs Registranter* Vol. VIII, pp.269-275.

¹⁰¹ S.C. Brees, *A Glossary of Civil Engineering*, (London, 1841).

¹⁰² Translated from Norwegian transcriptions of the Nedstrand toll lists, Karmsund Folkemuseum, Haugesund, Norway and Bugge, *Den norske trælasthandels historie*, p.356.

¹⁰³ Bugge, *Den norske trælasthandels historie*, p.346 and Gwilt, *Encyclopædia of Architecture* p.992.

¹⁰⁴ *The Concise Scots Dictionary*, p.511.

Raffte bielcher, ruvertræ (Norwegian): rafter beams.

Ruverbord (Norwegian): *ruv* means roof and probably referred to sarking boards.

Sarking (Scots): to cover the rafters of a roof with wooden boards, line a roof with wood for the slates to be nailed on.¹⁰⁵

Schotte, skotse, schotse (Norwegian): Scots or Scottish.

Schottefürrebielcher (Norwegian): probably Scots Pine beams, rather than Scottish pine beams. This description may have been a means to differentiate between spruce timber (*gran*) and Scots Pine (*furu*).¹⁰⁶

Seksæring (Norwegian), sixern (Shetland): Norwegian built rowing boat with six oars.¹⁰⁷

Initially built in Norway these were dismantled with each component numbered prior to export.

On arrival they were set together again.¹⁰⁸

Skailie: roofing, but also used to describe wooden and stone shingles, sandstone (Carmyllie) and blue slates.¹⁰⁹

Skottebjelker (Norwegian): beams destined for Scotland.¹¹⁰

Skotsesperer (Norwegian): Scottish spars, *i.e.* spars or poles destined for the Scottish timber markets.

Skowis: strips of wood for wattle work, or lathes/battens.¹¹¹

Smaa schottebielcker (Norwegian): small Scottish beams, denoting the timbers' intended market. Short beams of six and eight Norwegian ells produced in Ryfylke during the 1630s.

Smale (Norwegian): small or narrow.

¹⁰⁵ Ibid., p.581.

¹⁰⁶ Scots Pine (*Pinus sylvestris*): The name derives from Latin *pinus* via French *pin* (pine); in the past (pre-18th century) this species was more often known as "Scots Fir" or "Scotch Fir" (from Danish *fyr*), but "fir" is restricted to *Abies* (spruce) and *Pseudotsuga* in modern English. Other names sometimes used include Riga Pine and Norway Pine, and Mongolian Pine for var. *mongolica*. "Scotch Pine" is another variant of the common name, used mostly in North America. The lumber or timber from it is also called red deal. http://en.wikipedia.org/wiki/Scots_Pine, 9 February 2009

¹⁰⁷ Thowsen, 'Norwegian Export of Boats to Shetland....'

¹⁰⁸ A. Espeland, "Skottene i Hordaland og Rogaland" [The Scots in Hordaland and Rogaland], (Norheimsund, 1921) p.23.

¹⁰⁹ Bruce Walker, 'The use of 'Skailie' in Medieval and Post-medieval Scotland, in *Antiquity* 75 (2001), pp.163-71. Pride, *Glossary Scottish Building*, p.69.

¹¹⁰ Bugge, p.348; Arnvid Lillehammer, 'Boards, Beams and Barrel-hoops: contacts between Scotland and the Stavanger Area in the Seventeenth Century', in G.Simpson (ed.), *Scotland and Scandinavia 800-1800* (Edinburgh, 1990), p.104 ; Lillehammer, *Timber Trade and Ryfylke Farmers*, p18; .

¹¹¹ Bugge, *Den norske trælasthandels historie*, p.219.

Sparris: a general term for all masts, yards, booms, gaffs, and poles of moderate length and thickness and also an undressed stem of fir or similar wood under six inches in diameter.¹¹²

Spoke, stake: a spoke of a wheel, a wooden bar, rod or batten, a stake or pale in a wooden fence.¹¹³

Timber cladding: vertical boards applied to the exterior of buildings, normally of oak or Scots Pine.¹¹⁴

Tree: a beam. It can refer to ‘... a tree felled for timber, the trunk of a tree used as a timber, passing into a baulk or beam of wood put to various uses...’ and also ‘a baulk or beam of wood supplying a major element of a structure, a rafter, post, stake, mast etc...’¹¹⁵ Frequently used in compounds, *e.g.* roof tree etc. (O.E. treow).

Single /double treis: beams of different thickness, dimensions unknown.

Treenail, trenail: cylindrical wooden pins or pegs of hard wood used in fastening timbers together, especially in shipbuilding and other work where the materials are exposed to the action of water *e.g.* roofing.¹¹⁶

Wainscot: timber used to line walls with boards, generally of oak, and refers to oak in either sawn or wrought state.¹¹⁷ A good quality imported oak,¹¹⁸ chiefly used for fine panel-work; logs or planks of this oak; oak boarding for panel-work.¹¹⁹ Imported from Danzig, but also Germany where oak timbers were shipped down the Rhine to the Netherlands for processing at Amsterdam and Rotterdam.

Long and short wainscot: probably oak timber, but dimensions unknown.

¹¹² *Oxford English Dictionary Online* (Oxford University Press 2008), Accessed 19 May 2008.

¹¹³ *The Concise Scots Dictionary*, p.649.

¹¹⁴ Walker, ‘The Use of Vertical Timber Cladding in Conjunction with the Platform frame in urban Scotland during the Sixteenth Century’, in *Transactions of the Ancient Monuments Society Volume 50 (2000)*, pp.69-110.

¹¹⁵ See Walker, ‘The use of the Scottish National Dictionaries in the Study of Traditional Construction’ in *Perspectives on the Older Scottish Tongue: A Celebration of DOST*, (eds) Christian J. Kay and Mackay, Margaret A., (Edinburgh University Press, 2005), pp. 159. Also G. Pride, *Glossary Scottish Building* p.78.

¹¹⁶ *Oxford English Dictionary Online* 2008, accessed 19 May 2008.

¹¹⁷ Pride, *Glossary Scottish Building*, p.80.

¹¹⁸ <http://www.dsl.ac.uk/>: *Dictionary of the Scots Language*, Accessed 30 June 2008.

¹¹⁹ *Oxford English Dictionary Online*, accessed 18 May 2009.

Wainscot wood: any species of wood that was suitable for lining walls with panels, in the sixteenth century it was usually oak, but later in the seventeenth century either oak or pine was used.¹²⁰ At Craigievar in Scotland Memel pine was used for panelling the Ladies' Withdrawing room.¹²¹ The term was also used to describe furniture made from imported oak.¹²²

¹²⁰ Edwin Haynes, *Timber Technicalities*, (London, 1921) p.154.

¹²¹ Ian Shepherd, *Aberdeenshire: Donside and Strathbogie: An Illustrated Architectural Guide*(Oxford, 1006) p.90.

¹²² Adam Bowett, *English Furniture 1660 -1714 From Charles II to Queen Anne*, (Antique Collectors' Club, 1988), p.311.

PART ONE

TIMBER IMPORTS: PRODUCTION AND PURCHASE

CHAPTER 1: TIMBER IMPORTS TO SCOTLAND



Figure 4: The main geographical locations involved with the Scottish timber trade.

For Scotland, the economic value of timber was enormous since practically every activity such as farming, fishing, building, and transport relied to some degree on its use. It was essential for tools, packaging, fencing, tanning, dyeing and fuel, and fundamental to larger scale projects such as building houses and ships. But by the early years of the sixteenth century Scotland's resources of timber were no longer sufficient to meet demand and imports were necessary. This chapter makes use of the Danish Sound Toll Records and the Dundee Shipping Lists to identify different trends associated with timber imported to Scotland from the Baltic and Scandinavia from the sixteenth century onwards.

In 1503, Parliament declared that Scotland's woods were "utterly destroyed"; a destruction that had in part been hastened by James IV and his pursuit of shipbuilding for the

expansion of his navy.¹ Parliament's dramatic assertion was succeeded by a number of parliamentary acts in both the sixteenth and seventeenth centuries to protect woods from over use, to encourage the planting of trees for future strategic and economic purposes and to promote good practice so,

...that every man spiritual and temporal within this realm having a hundred pound land of new extent per year, and may spend so much, where there are no woods or forests, he should plant woods and forests and make hedges and enclosures for himself extending to three acres of land....

At the same time harsh penalties were outlined for,

...destroyers of green wood by cutting, peeling of the bark, burning or felling, and likewise of all new enclosures, shall be accused thereof according to the acts and statutes made thereupon of before, and the pain thereof shall be in times coming for the first time £10, the second time £20 and the third time death...²

Oak, due to its strength and resilience, was considered the most valuable of timber and used whenever possible for high status buildings and shipbuilding. One of the best surviving examples of oak being used in roof construction is the spectacular hammerbeam roof at Darnaway Castle, constructed in 1387, and which has survived intact. By the sixteenth century, however, native oak trees of sizeable dimensions for building construction became harder to source.³ The other main type of timber used for construction was Scots Pine, favoured for its characteristic tall and straight growth. When processed, these timbers provided the necessary long and straight beams and planks for building construction. The earliest surviving example of a roof structure constructed from native pine can be found at Castle Grant, Speyside, which dates from the sixteenth century. The beams there measure 18 feet long, with a diameter of up to fourteen inches. This type of timber was grown in the Highlands and was therefore expensive to

¹ T.C. Smout, Alan R. MacDonald and Fiona Watson, "Extent and Character of the woods, 1500-1920", in *A History of the Native Woodlands of Scotland*, (Edinburgh, 2005) pp 45-47, and Norman MacDougall, *James IV*, (Edinburgh, 1989).

² *The Records of the Parliaments of Scotland to 1707*, K.M. Brown et al eds (St Andrews, 2007-2009), 1535/16 and 1535/17. Date accessed: 17 May 2009.

³ Smout, MacDonald and Watson, *History of the Native Woodlands of Scotland*, p.80-82.

transport south overland; it also had a reputation for being of poorer quality for building *i.e less rigid* than imported timbers, although according to Smout this was not always the case.⁴

Despite the ‘destruction’ of Scotland’s forests by the early sixteenth century, there are a number of seventeenth century sources identified by Anderson in *A History of Scottish Forestry*⁵ indicating that domestic timber continued to be felled for commercial use. These included oak trees of substantial size in Ayrshire that,

...the Countrey is not able to consume it by their building and other Instruments and amongst them be oake trees of considerable size both for high and breadth that will serve either for Jests or roofs of good houses.⁶

Other examples from the *Burgh Records of Edinburgh*, 1655-65 include timber taken from the Falkland Wood for repairs at the harbour of Leith in 1656.⁷ Masts for the English navy were sourced from Ross of Balnagown forests in the 1650s and 1660s when supplies from the Baltic were hindered by the Anglo-Dutch wars. In the 1670s James Baine, His Majesty’s Master Wright, also purchased regular supplies of building timber from Balnagown for the Crown works.⁸ The Register of the Privy Council records the operation of a 1670s sawmilling business at Rannoch in Perthshire producing 7-8,000 deals annually.⁹ The Glamis *Book of Record* documented the sale of trees by the Earl of Strathmore to a Dundee timber merchant in the 1680s.¹⁰

However, the continued extraction of timber from woodland combined with a climatic shift toward lower temperatures and increased rainfall prevented the sufficient natural renewal

⁴ Ibid., p.84-85.

⁵ Mark Loudon Anderson, *A History of Scottish Forestry*, Vol. I, (1967) pp 315-332.

⁶ A. Mitchell, (ed.), ‘Geographical Collections relating to Scotland made by Walter Macfarlane’, Volume II, *Scottish History Society* Vol.52 (Edinburgh, 1907) p.12.

⁷ Wood, Marguerite (ed.), *Extracts from the records of the Burgh of Edinburgh*, Volume 10 Scottish Burgh Records Society, (Edinburgh, 1869-1967) pp.17 and 145.

⁸ MacDonald, ‘The Royal Navy, Holyrood and the Pinewoods of Strathcarron’, pp.319-339, in Smout, MacDonald and Watson, *A History of the Native Woodlands of Scotland*.

⁹ Peter Hume Brown, *Register of the Privy Council of Scotland*, Series 3, Vol.III: 1665-1676, (University of St. Andrews, 2005), pp.147-8.

¹⁰ Patrick Lyon, 1st Earl of Strathmore., 1642-1695. *The Book of Record: a diary written by Patrick first Earl of Strathmore and other documents relating to Glamis Castle, 1684-1689*, A.H. Millar (ed.) Scottish History Society 9, (Edinburgh, 1890) p.40.

of tree cover.¹¹ In fact, some woodland seems to have disappeared quite naturally by the sixteenth and seventeenth centuries with the only trace of an area's previous appearance remaining in place-names such as *Coille Mhór* – the Great Wood.¹² In areas where woodland did remain, it was often due to the impracticalities and expense of transporting it – usually over very difficult terrain – to domestic markets. Therefore Scots who required substantial amounts of timber suitable for building projects had to import timber from abroad, usually from either Scandinavia or the Baltic.

Identifying imported timbers: dendrochronology

The Scottish timber trade with the Baltic can be dated as far back as the fourteenth century, when imported oak timbers were required to supplement domestic supplies. The earliest physical evidence consists of oak timbers found in St. Andrews originating from the eastern Baltic, and oak staves from northern Poland (Gdańsk) used in a barrel found in Aberdeen.¹³ In the fifteenth century, the *Accounts of the Lord High Treasurer* recorded the purchase of Eastland or Estland (Estonia)¹⁴ boards for the ceiling of the Chapel at Stirling Castle in 1494, and Eastland boards for Linlithgow and Edinburgh Castle in 1496.¹⁵ Some fifteenth century Eastland boards have also been identified by dendrochronology in the Guthrie Aisle painted ceiling (originally in Angus) and carved panels from Perth.¹⁶ Dendrochronology at the palace of Stirling Castle has also confirmed that oak timbers used there date from the early sixteenth century, and that the provenance of these timbers had a strong correlation with

¹¹ Smout, MacDonald and Watson, *A History of the Native Woodlands of Scotland*, p.58.

¹² *Ibid.*, pp 45-47.

¹³ C.Mills, 'Dendrochronology of oak timbers from historic buildings in St.Andrews, Fife', *Tayside and Fife Archaeological Journal*, Vol.6 (2000) pp. 200-210, and Anne Crone and Fiona Watson, 'Sufficiency to Scarcity: Medieval Scotland, 500-1600', in T.C. Smout (ed.), *People and Woods in Scotland: A History* (Edinburgh University Press, 2003) p.75.

¹⁴ The Duchy of Estonia (Swedish: *Hertigdömet Estland*) or *Swedish Estonia* (Swedish: *Svenska Estland*) was a dominion of Swedish Empire from 1561 until 1721, when it was ceded to Russia following the Great Northern War. *Estland* is the modern name for Estonia in German, Swedish, Danish, Norwegian, Dutch and some other Germanic languages. http://en.wikipedia.org/wiki/Swedish_Estonia, accessed 25 October 2009.

¹⁵ Thomas Dickson, (ed.), *Accounts of the Lord High Treasurer of Scotland Volume I A.D.1473-1498*, Searchable Text Edition (Tanner Ritchie Publishing, 2004) pp. 238, 278, 280.

¹⁶ Smout (ed.), *People and Woods in Scotland: A History* (Edinburgh, 2003) p.75.

southern Sweden and Denmark rather than the eastern Baltic. Older timbers still *in situ* were also identified as being Scottish in origin, possibly from Darnaway in the north east where there was a Royal forest.¹⁷ The results from Scots Pine samples from Stirling Castle proved to be less conclusive, although the analysis did indicate that it all may have been felled from the same stand of woodland. The results were compared with pine chronologies from Scotland, Sweden and Norway, but no matches were found. This may be because the timber originates from a period and region which is not yet covered by a master chronology.

Early imported oak timbers have also been identified at a house in Brechin; these were dated to 1470 and have been provisionally ‘dendro-provenanced’ to the region of southern Sweden and Denmark.¹⁸ These timbers were then re-used in a second roof construction at some time between the middle of the sixteenth century and the end of the seventeenth century, possibly at the same site. Interestingly, the additional oak timber used in the later roof construction proved to be an extremely rare survival of post-medieval native oak in Scotland. A similar re-use of timbers for roof construction has been identified at Claypotts, Dundee. Additional storeys were added in 1584, and the new roof incorporated the old roof timbers, albeit with their original carpenter’s marks out of sequence, as would be expected.¹⁹

New research on the timbers of the early sixteenth century Great Hall at Edinburgh Castle has for the first time positively identified Norwegian oak timbers in Scotland dated to c.1509.²⁰ The dendro-chronology results reinforce the argument that trade with Norway was probably important much earlier than documented sources have previously been able to demonstrate. Until recently, it has been difficult to identify Norwegian oak timber because there was a lack of data for Norwegian native chronologies. However, this find at Edinburgh contributes to the known Scottish import chronology and confirms that timbers tested earlier at

¹⁷ A. Crone and R. Fawcett, ‘Dendrochronology, Documents and the Timber Trade: New Evidence for the Building History of Stirling Castle’, Scotland in *Medieval Archaeology: Journal for the Society for Medieval Archaeology* Vol.42, (1998).

¹⁸ A.Crone, N.Grieve, K.Moore, and D.R. Perry, ‘Investigations into an early timber-frame roof in Brechin, Angus,’ in *Tayside and Fife Archaeological Journal* Vol. 10(200) pp152-165.

¹⁹ Pers. Comm. Charles McKean.

²⁰ Crone, A. and D. Gallagher, ‘The Late-medieval Roof over the Great Hall in Edinburgh Castle’, in *Medieval Archaeology* Vol.52, (2008) pp.231-260.

Fenton Tower and Duntarvie Castle are also probably Norwegian, dating to the mid-sixteenth century.²¹ Not only have Norwegian oak timbers been identified, but also Danish and German, which confirms that timber was stockpiled from Baltic sources in the earlier sixteenth century as well. A feature of the construction method used by the carpenters that also supports this at Edinburgh Castle was that the frames were constructed from timbers felled in different years, dating from 1505 to 1509. More recent dendro-analysis of oak beams and pine boards belonging to a painted ceiling from Abbey Strand at Holyrood, Edinburgh has confirmed that Norwegian oak dated to c.1564 was used for the ceiling beams. The results for the pine boards were less conclusive, but are also likely to originate from Norway. At present, the quality of pine chronologies in Norway makes it impossible to pinpoint specific localities using the available regional data.²² As dendrochronology research progresses and more complete chronologies for both oak and pine timber in Scotland, Scandinavia (specifically Norway) and the Baltic are built up, it is likely that additional physical evidence of the earlier trade with Norway will emerge. In buildings where there are no surviving documentary sources that record the acquisition of timber, this technique will become a reliable tool for establishing not only dates but also the provenance of any surviving timber components.²³

The Danish Sound Toll Registers (STR) provide further information on the purchase of timber from the Baltic in a series of virtually unbroken chronological journals that run from 1497 to 1857. The Sound Toll was introduced at Øresund in 1426 by Eric of Pomerania (1412-38), who was less than sympathetic towards the trading practices of the then dominant Hanseatic League (Figure 4). He allied himself with Poland against the Teutonic Order and encouraged Dutch and English merchants to trade with Norway and Denmark, whilst harassing the Hansa merchants. Originally he imposed a toll on all ships passing through the Sound, but over time an

²¹ Ibid., 250-251.

²² Anne Crone, *Dendrochronological Assessment of the Historic Scotland Collection of Painted Ceiling Timbers*, unpublished report by AOC Archaeology 2002.

²³ AOC Archaeology, Edinburgh are currently pursuing research to construct comprehensive chronologies for Scottish Native oak and pine; Niels Bonde National Museum, Copenhagen, Denmark currently involved with dendro project to establish chronologies of oak from coastal area of south-west Norway.

ad valorem duty (*i.e.* a proportion of the value of the goods) was also added to cargoes and this toll was imposed for more than 400 years until it was finally abolished in 1857.²⁴

The published STR cover the period from 1497 to 1783, and although not the perfect means to assess precise volumes of commodities carried via Øresund, provide us with an idea of trends in the trade and of what these various commodities were, plus the countries and ports involved with this trade route.²⁵ It is quite clear from the published tables in Danish covering 1497 to 1657 that timber was passing through Øresund on Scottish vessels from Danzig (Gdańsk) and Königsberg (Kaliningrad),²⁶ two ports with well established Scottish communities.²⁷

The nature of the data in the published STR means it is difficult to determine how the trade was divided up between different nations. That is because the Registers make it unclear as to whether the home port – *hjemsted* - refers to the domicile of the skipper or of the ship. However, in his paper, ‘Scottish trade with the Baltic 1550-1650’, S.G.E. Lythe suggested that there is no reason to imply that there were significant numbers of Scottish ships with foreign skippers, or that there were many Scots skippering foreign vessels.²⁸ For Leith and Dundee vessels it is reasonable to assume that where a Scottish domicile is given it relates to both ship and skipper.²⁹

The most frequently named Scottish ports in the STR are found on the east coast. In the period covering 1497 to 1657 (Volume I of the Sound Toll Registers) the ten most numerous places based on *hjemsted* are Leith, Dundee, St Andrews, Anstruther, Aberdeen, Montrose,

²⁴ P. Dollinger, *The German Hansa*, trans. D.S.Ault and S.H.Steinberg (Macmillan, 1970) p.295.

²⁵ Aksel, E. Christensen, *Dutch Trade to the Baltic about 1600: Studies in the Sound Toll Register and Dutch shipping records*, (Copenhagen/The Hague, 1941), and T.C.Smout, *Scottish Trade on the Eve of Union, 1660-1707*, (Edinburgh, 1963), pp.46-48.

²⁶ N.E.Bang and K.Korst, (eds.) *Tabeller over Skibsfart og Varetransport gennem Øresund 1497-1660* [Tables of Shipping and Goods through Øresund 1497-1660] (Copenhagen, 1906, 1922, 1933).

N.E.Bang and K.Korst, (eds.) *Tabeller over Skibsfart og Varetransport gennem Øresund 1661-1783* [Tables of Shipping and Goods through Øresund 1661-1783] (Copenhagen, 1930-45).

²⁷ Smout, *Scottish Trade on the Eve of Union*, p.161.

²⁸ Lythe, S.G.E., ‘Scottish Trade with the Baltic’, in Eastham, J.K. (ed.) *Economic Essays in Commemoration of the Dundee School of Economics 1931-1955*, (Coupar Angus, 1955) p64.

²⁹ Eric J. Graham, *A Maritime History of Scotland 1650-1790*, (East Linton, 2002) p.137.

Kirkcaldy, Pittenweem, Burntisland and Dysart.³⁰ In total 4,535 vessels were recorded as originating from these ports (Figure 5).

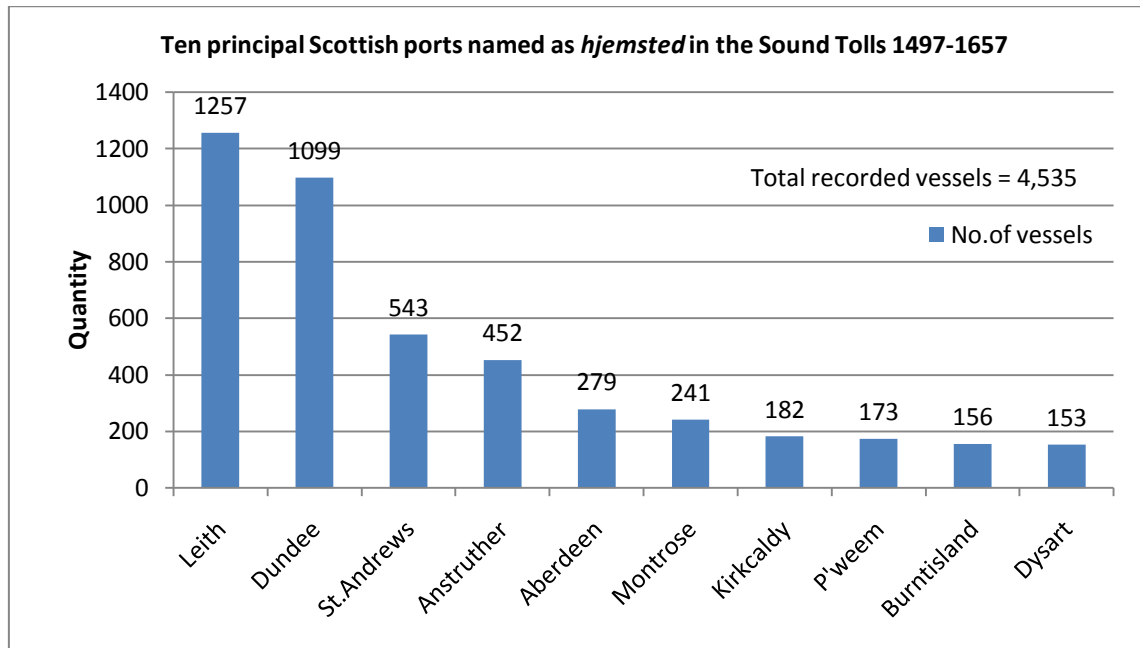


Figure 5: Scottish ships and homeport – hjemsted - based on the ten principal Scottish ports with ships passing westwards through Øresund 1497-1657. Data taken from Bang and Korst, (eds.) *Tabeller over Skibsfart og Varetransport gennem Øresund 1497-1660* (Copenhagen, 1906, 1922, 1933).

Although it was not possible to extract the number of ships which carried timber cargoes from the published data, these figures do serve to indicate the level of traffic with Scottish ports and skippers who had regular contact with the Baltic, since every ship passing through the Øresund would have been recorded. Other than timber, cargoes included linen and hemp cloth, ash, pitch, iron and grain. That timber was exported to Scotland via the Sound is also supported from evidence in the Master of Works Accounts where there are numerous references to 'Estland burds' and several to 'swadin buirdis'.³¹ The number of Scottish ships recorded during this 160 year period amounted to 5,364 meaning on average that approximately 30 Scottish vessels sailed to the Baltic annually.

Figure 6, showing the average number of Scottish vessels (from all ports) travelling west through the Øresund over ten yearly intervals from 1558 to 1657 reveals that traffic increased in

³⁰ Bang and Korst, (eds.) *Tabeller over Skibsfart og Varetransport gennem Øresund 1497-1660*.

³¹ Henry Paton, (ed) *Accounts of the Masters of Works Vol.1 1529-1615* (Edinburgh, 1957) for Eastland board see pp. 4, 26, 33, 42, 43, 57, 59, 65-7, 75-8, 80, 85-92, 96, 105, 106, 125, 175-84, 221, 228, 261-3, 287, 288, 302, 303, 305-398 and 420. Swedish timber see pp95-7, 181, 219, 220, and 289.

the later sixteenth century until it peaked at the turn of the century, when the numbers started slowly to decline. This confirms the late sixteenth century building boom observed by McKean in *Scottish Chateau*, illustrated in Figure 7.³²

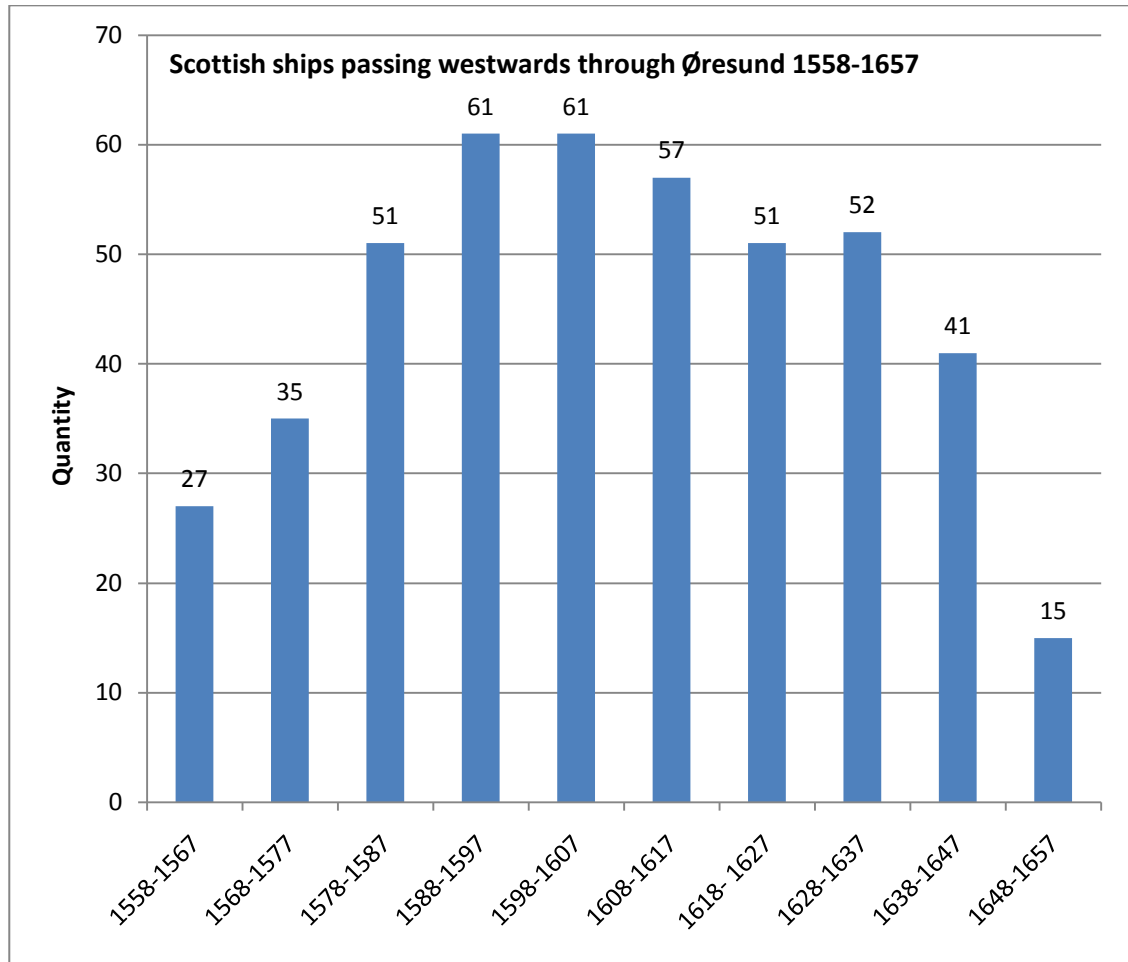


Figure 6: Scottish ships passing westwards through Øresund; showing the average number of ships over ten yearly intervals from 1558 to 1657. Data taken from N.E.Bang and K.Korst, (eds.) *Tabeller over Skibsfart og Varetransport gennem Øresund 1497-1660* (Copenhagen, 1906, 1922, 1933).

³² McKean, *Scottish Chateau*, p.122.

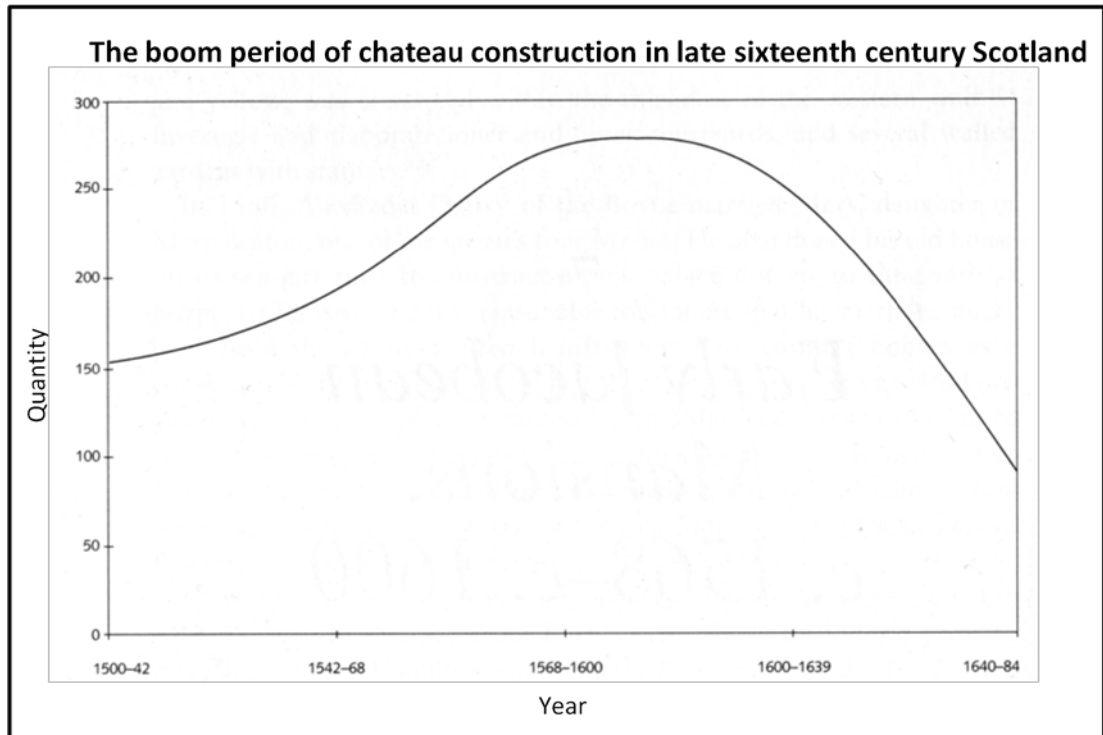


Figure 7: Graph illustrating the boom in chateau construction in late sixteenth century. Adapted from McKean, *Scottish Chateau*, p. 122.

Despite the limitations of the recorded data, the published STR can be used to detect patterns in quantities of timber being carried by both Scottish and Baltic vessels westwards through the Øresund. The tables identify various categories of timber, and their glossary includes over 50 different terms and their translations. Figure 8 is based on this data, and illustrates general trends in the quantities of the two main types of timber named - wainscot and klapholt – measured in hundreds, which passed through the Øresund. The two main ports which exported this timber on Scottish vessels were Danzig (Gdańsk) and Königsberg (Kaliningrad).

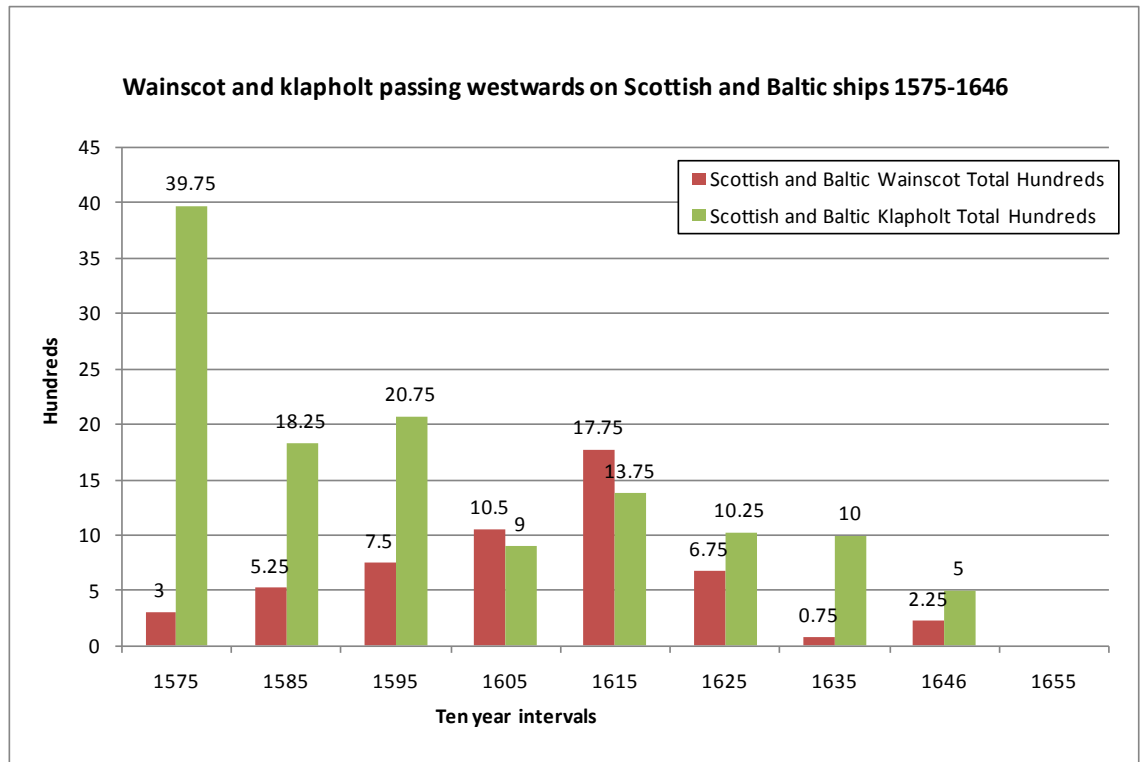


Figure 8: Quantities of wainscot and klapholt exported from the Baltic on Scottish and Baltic ships, calculated in ten yearly intervals from 1575 to 1646. Data taken from Bang and Korst, (eds.) *Tabeller over Skibsfart og Varetransport gennem Øresund 1497-1660* (Copenhagen, 1906, 1922, 1933).

Baltic ships carrying timber westwards were recorded in ten year intervals in the published tables and Figure 8 combines this data with the records of Scottish vessels sailing westwards with timber. Although the impact of significant (but unquantifiable) smuggling is not accounted for here, some general trends are clear:

- Quantities of klapholt being traded between the Baltic and Scotland declined steadily throughout the period.
- The trade in wainscot peaked at around 1615.
- Both klapholt and wainscot cargoes from the east declined to virtually nothing by 1655.

The overall decline in timber cargoes sailing through Øresund indicates that Scottish merchants and skippers were sourcing timber from elsewhere; probably Norway. There are a number of reasons for the decrease in exports from the Baltic. In Michael North's paper 'The Export of timber and timber by-products from the Baltic to western Europe in the sixteenth and

seventeenth centuries', the reduction in trade from 1640 is seen as a result of a decline in exports from Danzig (Gdańsk) and in particular Königsberg (Kaliningrad). In 1639 there was an introduction of a port toll/duty at Königsberg and klapholt exports were subsequently overtaken by those from Riga. However, Riga's klapholt exports also fell steadily in the latter half of the seventeenth century. Riga's exports were predominantly flax and hemp, with timber never amounting to more than 20% -30% of total exports.³³ Wainscot followed a similar downward trajectory and the only processed timber product that continued to increase was *pipeholt* – used for making wine pipes. These trends are mirrored by the decline of ash production in the second half of the century, and both are seen by North as symptomatic of the devastation of the forests in these areas.³⁴

The fall in klapholt and wainscot exports could quite simply reflect a fall in demand for barrel staves and panelling boards, but this seems unlikely in a world where barrels were the main means used for packing goods and planks were a necessary component for the flooring or cladding of buildings. The most probable explanation is that another supplier - Norway - had entered the market, able to provide similar or substitute materials more quickly and cheaply.

An analysis of the data concerning plank and deal exports from the Baltic reveals a very different trend. Figure 9 is based on the number of pieces *i.e.* individual planks and deals on Scottish vessels sailing westwards.

³³ Attman, *Russian and Polish Markets in international trade, 1500-1650* p.48.

³⁴ Michael North, 'The Export of timber and timber by-products from the Baltic to western Europe in the sixteenth and seventeenth centuries', in *The Baltic as a Trade Road: Timber Trade in the Baltic Area: Competition between Steam and Sails*, VII Baltic Seminar in Kotka (Porvoo, 1989)pp. 3-16.

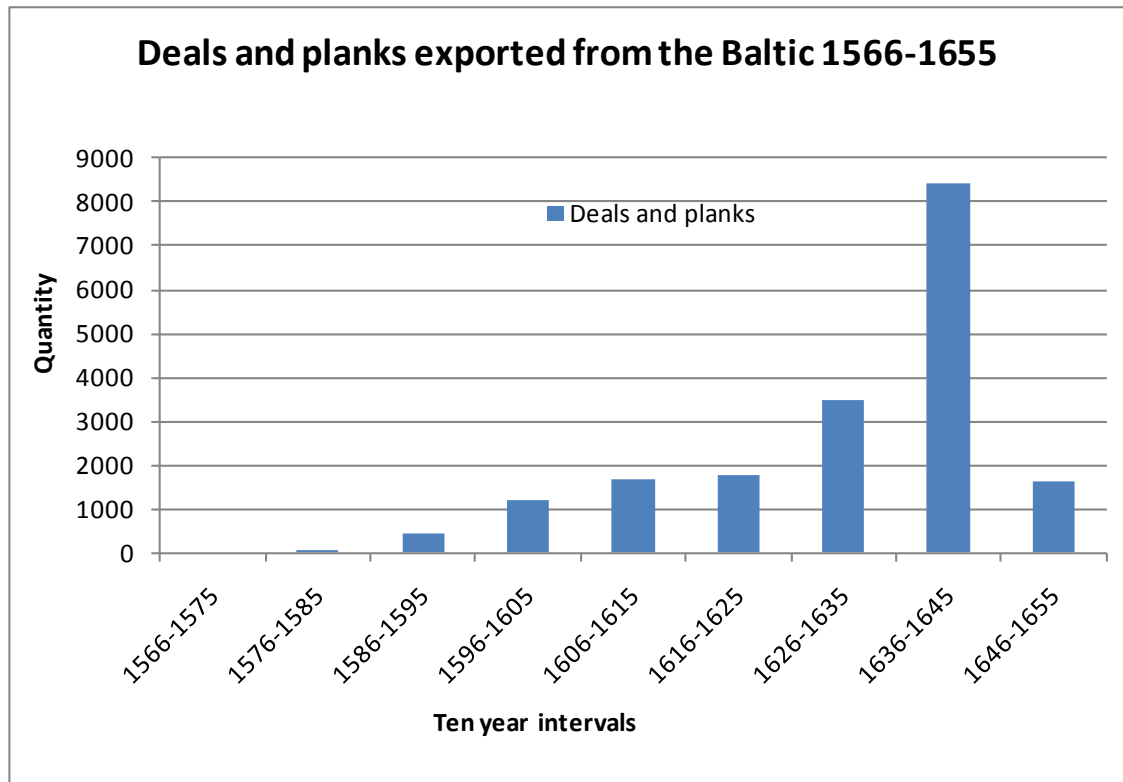


Figure 9: Graph showing the export of deals and planks from the Baltic in ten year intervals 1566-1655. Data taken from N.E.Bang and K.Korst, (eds.) *Tabeller over Skibsfart og Varetransport gennem Øresund 1497-1660* (Copenhagen, 1906, 1922, 1933).

The figure shows a gradual increase in total quantity from the start of the seventeenth century, followed by a dramatic increase from 1635 to 1645. This was followed by an immediate collapse to 20% of the previous decade's total. The trends are clear, but the numbers are relatively small considering that these are for an entire decade (same timescale as Figure 6). Why such small volumes? This may have been a combination of small vessels and that only small quantities were available, or possibly due to the methods of production available in the Baltic. The similar increase in deals and planks and decrease in klapholt (Figures 8 and 9) could indicate a change in preference by markets in the west.

Dundee was the second most important Scottish port importing timber, and the Dundee Shipping Lists (DSL)³⁵ provide a wide range of information relating to ships that arrived in that port from c.1612-1713. Further information can be found in *David Wedderburne*

³⁵ Four burgh registers of shipping known as the Dundee Shipping Lists 1580-1713: Dundee City Archives

of *Dundee's Compt Buik* which covers the period from 1580 to 1618.³⁶ The Dundee City Archives have combined these sources to create a database³⁷ that is an invaluable means for examining the foreign timber imports entering Dundee in the late-sixteenth and seventeenth centuries.

Between 1612 and 1650 (Figure 10), over 700 ships arrived in Dundee from the Baltic Sea Region – namely Danzig, Königsberg, Sweden and Denmark. Initially German ports were also included, but only one entry contained a reference to timber in the form of firewood, and so German entries have been omitted from this chart. The majority of vessels arrived from Swedish ports, mainly Stockholm and Gothenburg, but it was usually only ships from Gothenburg which carried timber cargoes, (predominantly barrel staves and fir deals). The majority of Swedish ships sailing from Stockholm carried cargoes of iron. Likewise, ships arriving in Dundee from Gdańsk and Königsberg were not always fully laden with timber; they frequently carried mixed cargoes with pitch, tar, lint and hemp alongside the wainscot, klapholt and trenails. On a number of occasions no timber was brought into Dundee on these Baltic vessels.

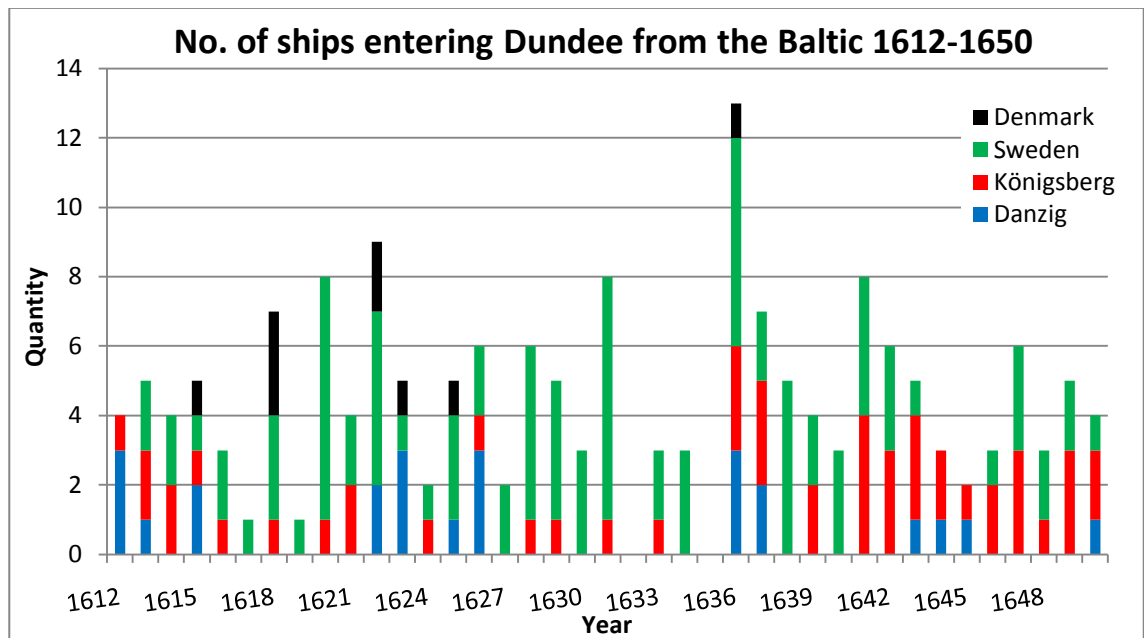


Figure 10: Ships entering Dundee from the Baltic (excluding German ports) 1612-1650. Source: Dundee Shipping Lists, Dundee City Archives.

³⁶ Millar, (ed.), *The Compt Buik of David Wedderburne*, pp.193-302.

³⁷ Friends of Dundee City Archives, Dundee Shipping List Database, 2005.

In contrast, the vessels arriving in Dundee from Norway always carried timber, and it is quite apparent from the DSL that these vessels were the more numerous. Between 1612 and 1650 almost 700 entries recorded ships that had, “laitlie cum from Norroway...”³⁸ all of which contained timber of one sort or another. That compared with 94 arrivals from Sweden, 49 from Königsberg, 24 from Danzig and nine from Denmark - a total of 174. However, only ships from the Baltic carried wainscot timber, and only one of these specifically described a cargo of wainscot of pine.³⁹

Figure 11 shows the volumes of deals imported from Norway to Dundee in ten year intervals from 1616 to 1655. The imports peaked in the decade 1636-1645, which coincides with the peak in deal exports from the Baltic (Figure 9), and confirms an overall increase in demand at this time. However, the total volume of deals arriving in Dundee from Norway was markedly different; over the whole period it amounted to 273,684 deals, whereas the total number of deals leaving the Baltic during the same period amounted to only 18,660 or approximately 7% of the Norwegian total. This indicates not only a preference for Norwegian deals, but also the likelihood that Baltic sources were becoming increasingly more complicated to acquire, and the Øresund toll certainly meant they were more costly.

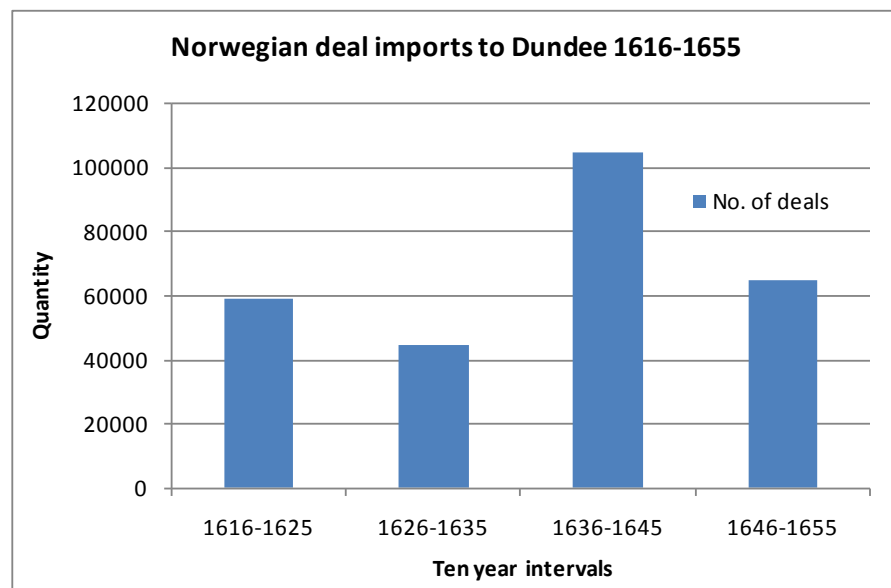


Figure 11: Graph showing the import of deals from Norway to Dundee in ten year intervals from 1616 to 1655. Source: Dundee Shipping Lists, Dundee City Archives.

³⁸ Millar, *The Compt Buik*, p.238

³⁹ Friends of Dundee City Archives, Dundee Shipping List Database, 2005.

The timber trade from the Baltic ports was also likely to have been seriously disrupted by the Thirty Years War which persisted in the region from 1618-1648. In particular the Danish phase of the war from 1625 to 1630, and the Swedish phase from 1630 to 1634 would have impinged on Scots sailing to and from the Baltic Sea Region via the Skaggeak.⁴⁰ Scottish merchants would probably have stayed away from these waters in order to avoid being caught up in the naval conflicts of the time. For example in November 1627 during the war between Poland and Sweden (1626-1629), a squadron of Swedish warships sailed into the Bay of Gdańsk to blockade the entrance to the port. This culminated in the battle of Oliwa and the loss of a Swedish warship *Solen*.⁴¹

The DSL data clearly shows that Norway was able to supply deals to Scotland on a far greater scale than the Baltic ports. Dundee enjoyed something of a building boom, particularly during the period 1636 to 1645 (Figure 11), and during this period Dundee's timber imports were clearly dominated by the trade with Norway rather than the Baltic. Since there is very little surviving data for the first half of the seventeenth century, it has not been easy to carry out comparisons between Dundee and other major Scottish ports. Nevertheless, by using the Shore Dues which survived for Leith from Martinmas 1638 to Martinmas 1639, it has been possible to compare the numbers of ships that arrived from the Baltic and Norway over a twelve month period. The Shore Dues, for which only this particular year's accounts have survived, can be considered as one of the most complete records of this period in Scotland, since every vessel which came into Leith had to pay these dues.⁴²

Based on these accounts, 33 ships arrived at Leith from Norway (only one of which did not contain timber), compared with 15 ships from the Baltic (including Sweden) of which under half were listed as having carried timber.⁴³ A comparison with the Dundee database for the same

⁴⁰ Thomas Munck, *Seventeenth Century Europe 1598-1700* (New York, 1989).ix and Steve Murdoch, *Britain, Denmark-Norway and the house of Stuart, 1603-1660* (East Linton, 1988).

⁴¹ Pers. Comm. Jadwiga Klim, The Polish Maritime Museum in Gdańsk.

⁴² The Aberdeen Shore Accounts were also examined for the same period 1638-1639. Four vessels from Norway and three from the Baltic of which only one had a description of the cargo, knapholt from Königsberg, in Louise B. Taylor, *Aberdeen Shore Work Accounts 1596-1670*, (Aberdeen, 1972), pp.232-239.

⁴³ My thanks to Sue Mowat for sharing her transcriptions of the Shore Dues and other Leith accounts, *Ships into Leith 1624-1690*, (unpublished).

year shows 24 ships arrived from Norway, and only four from the Baltic, including Swedish ports. These figures serve to illustrate that by now the majority of vessels that brought timber to these two major Scottish ports arrived from Norway,⁴⁴ and as has already been demonstrated by Smout, this trend continued into the second half of the seventeenth century wherein the main occupation of Scottish shipping was the timber trade with Norway.⁴⁵

Trade Restrictions

To the Scots of the late 1500s and 1600s, the conveniently located Norwegian forests of pine, spruce and particularly oak were seemingly without end. Trade with both Norway and the Baltic was seen as vital to Scotland's economy, with Norway the "storekeeper of her [Scotland's] naval supplies," essential for the building industry and "for the well being of the state."⁴⁶ Its significance was also illustrated by the exemption of those trading with Norway for timber from the 1573 statute banning the export of salt from Scotland. The trade's continued relevance is demonstrated again when ninety years later, in 1663, a ban on the export of bullion once more exempted those purchasing Norwegian timber.⁴⁷

Unfortunately for the Scots, the Norwegian forests were also viewed as being of the utmost importance for the Danish-Norwegian navy, and restrictions were first placed on the export of oak in 1562. However, in 1585 Dundee's town council did receive permission to import a cargo of oak timber from Norway for a church, possibly for work at St. Mary's, which underwent various repairs following fire damage c.1549.⁴⁸ The most sought after types of oak wood were posts and beams, crooked or curved pieces probably for shipbuilding and repairs,

⁴⁴ Also noted by Lythe, 'Scottish Trade with the Baltic,' p.80, and also 'The Norwegian Timber Trade' in *The Economy of Scotland 1550-1625* (Edinburgh and London, 1960) pp145-149.

⁴⁵ Smout, *Scottish Trade on the Eve of Union*, p.154.

⁴⁶ Ibid., p.154, and 'The Norwegian Timber Trade from the Scottish Perspective,' *Timber and Trade: Articles on the timber export from the Ryfylke area to Scotland and Holland in the 16th and 17th centuries*, (Fagrapport, nr 1: Lokalhisorisk Stiftelse, 1999), p.41.

⁴⁷ Smout, MacDonald and Watson, *A History of the Native Woodlands of Scotland*, pp 124-125, and A. Thomson, 'The Scottish Timber Trade, 1680-1800.' PhD. Diss., University of St. Andrews, 1990, p1.

⁴⁸ Norges Rigsregistranter III, 619 cited in A. Bugge, *Den norske trælasthandels historie (The History of the Norwegian Timber Trade)*, (Vol. I & II), (Skien, 1925) p.221. Pers.comm. Charles McKean - another use for the timber may have been for a new trade's gallery at the church, since it had been re-roofed by 1550.

corbels and knapholt (klapholt). By 1590 the Scots, English and Dutch were no longer permitted to purchase oak longer than 12 Norwegian ells.⁴⁹ Restrictions tightened further in the 1600s when the Danish-Norwegian authorities reinstated a policy of only allowing the export of wares by foreigners in exchange for goods such as flour, malt and other foodstuffs.⁵⁰ Originally this policy applied to the export of fish, but was later extended to include the export of timber. Meanwhile in Scotland there was an embargo on the export of foodstuffs due to shortages in the home market.⁵¹

The politics of the timber trade imposed restrictions for both importers and exporters alike. Scots had to seek permission by applying for a dispensation from the authorities to export foodstuffs such as grain to Norway for timber; conversely Norwegians had to apply to their authorities to export timber for grain. Despite such restrictions for the Scots, ships -particularly those from the east coast of Scotland -were still reaching the shores of Norway at Trondheim, Bergen, Stavanger, and Kristiansand in significant numbers in the 1620s.⁵²

Although no Norwegian timber from this date, of either pine or oak, has so far been positively identified in Scottish buildings using dendro-analysis, other documentary sources such as the Dundee Shipping Lists suggest both types of timber were imported in the first half of the seventeenth century despite these limitations. Figure 12 summarises the numbers of these shipments arriving at Dundee, showing that oak imports remained significant throughout the period 1612 to 1650.

⁴⁹ A. Bugge, *Den norske trælasthandels historie* p.205-221. It is important to note here that the Scottish ell after 1661 equalled 94 cm; whereas the Norwegian ell at this time was 63.3cm.

⁵⁰ Ibid., 221.

⁵¹ Ibid., p.221.

⁵² Ibid., p.272.

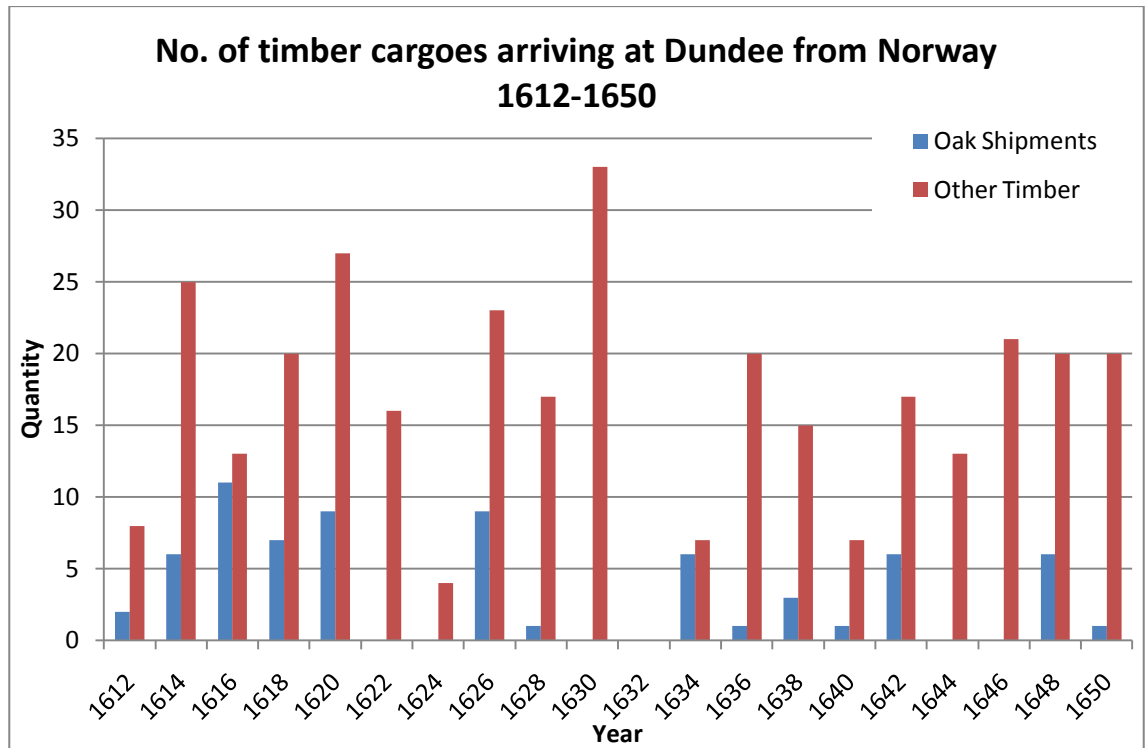


Figure 12: Arrivals of timber shipments from Norway to Dundee 1612-1650- DSL database.

The increase of wainscot imports from the Baltic corresponds to a major phase of building activity in the second decade of the seventeenth century by Queen Anna's Court,⁵³ as well as other Crown building works at Edinburgh Castle, Holyrood, Stirling Castle, Dumbarton and Linlithgow. In 1615 eight cart loads of wainscot and knapholt were carried from Leith to Edinburgh Castle.⁵⁴ The decline in these exports from the Baltic however was not matched by a decline in building operations, and some repairs continued at these buildings over the following decades. Did the increase in exports of pine deals and planking reflect a change in demand for building materials? Did Norway then become more important than the Baltic Sea Region in supplying this type of timber to Scotland? Or had Norway always been important and this has only become apparent when evidence from Norwegian sources became available from the end of the sixteenth century onwards?

⁵³Charles McKean, 'Some Later Jacobean Villas in Scotland' in M.Airs and G.Tyack (eds.), *The Renaissance Villa in Britain 1500-1700* (Reading, 2007).

⁵⁴ Paton, (ed.) *Accounts of the Masters of Works Vol.1 1629-1615* p. 373. Also see Imrie, J. and Dunbar, J.G., *Accounts of the Masters of Works Vol.2 1616-1649* (Edinburgh, 1982).

The Thirty Years War certainly had a major impact on reducing access to the Baltic, and the Øresund toll charges made this journey more dangerous and the timber more expensive. In addition, the ice-bound harbours of the Baltic further increased the risks of sailing there and resulted in a shorter sailing season, with fewer voyages possible for smaller Scottish merchant ships. The possibility of obtaining cheaper good quality timber, with a faster turnaround and lower risks attached to the voyage undoubtedly enhanced the prospects of sailing to Norway for timber. What is certainly clear is that the evidence from Dundee (1612-1650) and Leith (1638-1639) show that the majority of ships with timber cargoes during the first half of the seventeenth century, instead of arriving from the Baltic were now arriving from Norway.

In summary, a combination of factors contributed to the transition from predominantly Baltic to Norwegian timber imports in the sixteenth and seventeenth centuries. From the late fourteenth century, Norway's trade had been dominated by the controls and restrictions imposed by privileges granted to the German Hanseatic League and their *Kontor* or office in Bergen. Their trade from Norway was based in the main on the export of *stockfish* - air dried Lofoten cod - to southern Europe, and the import of grain from the Baltic. Eventually, the Hansa's control over Norwegian and Baltic trade diminished, particularly during the sixteenth century when internal conflicts arose within and between the different Hanseatic cities. At the same time, their position was further weakened when the trade route through the Danish Sound opened up, leaving Lübeck - the main Hansa city – seriously undermined and isolated.⁵⁵ The decline of the Hansa's domination of trade in Europe freed up commercial opportunities previously denied to Norway's citizens, and presented possibilities for other nations who now had several trading options. For the Scots, this now meant a choice between importing timber via Øresund or from Norway, a shorter, cheaper and safer voyage, which avoided the complications of the Thirty Years War, longer voyages, ice-bound harbours and the additional cost of passing through Øresund.

⁵⁵ J.A.Gade, *The Hanseatic Control of Norwegian Commerce during the Late Middle Ages*, (Leiden, 1951) pp.104-122.

Crucially, this new phase in Norwegian trading freedom coincided with a major technological advancement; the introduction of the water driven sawmill. Ultimately, this led to a massive rise in the production and export of timber, of which Scotland was to be one of the major benefactors.

CHAPTER 2: THE WATER DRIVEN SAWMILL, MASS PRODUCTION AND DEFORESTATION

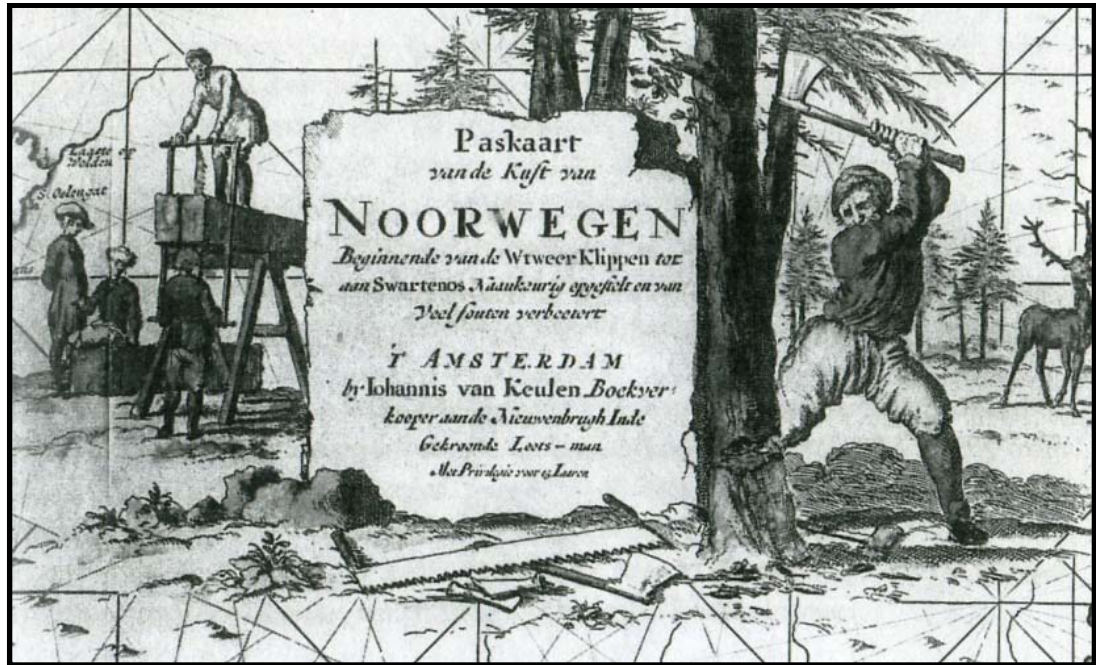


Figure 13: Detail from a Dutch map c.1650 showing Norway and the hand sawn method of processing timber using a frame-saw.

The introduction of the water driven sawmill was the catalyst for the mass production of processed timbers, and formed the basis for Norway's growing timber trade with foreign buyers during the sixteenth and seventeenth centuries. Using toll records from key areas visited by Scottish vessels, this chapter will show how this new technology presented new trading opportunities for many small farm owners in the fjords and along the coast of south-western Norway.

The growth in Norway's timber production was primarily due to the introduction in the early 1500s of the water-powered sawmill – *oppgangssag*¹ – which enabled the mass production of boards (planks).² Until the advent of sawmills, making boards and beams using frame-saws had been slow, inefficient and labour intensive work, which wasted a lot of valuable material.

¹ Oppgangssag - gate saw or sash saw, E. Haugen, Norsk-Engelsk ordbok, *Norwegian-English Dictionary*, (Universitetsforlaget, 1996), p.297.

² A. Bugge, *Den norske trælastshandels historie*, [The History of the Norwegian Timber Trade] (Skien, 1925) pp. 344-355.

Frame sawing was a method wherein two men each held one end of the saw; one standing over the log on a raised platform and one underneath (Figure 13). Alternatively logs could be split in two by hand using wedges and an axe (Figure 14), known in Norway as *huggenbord*.

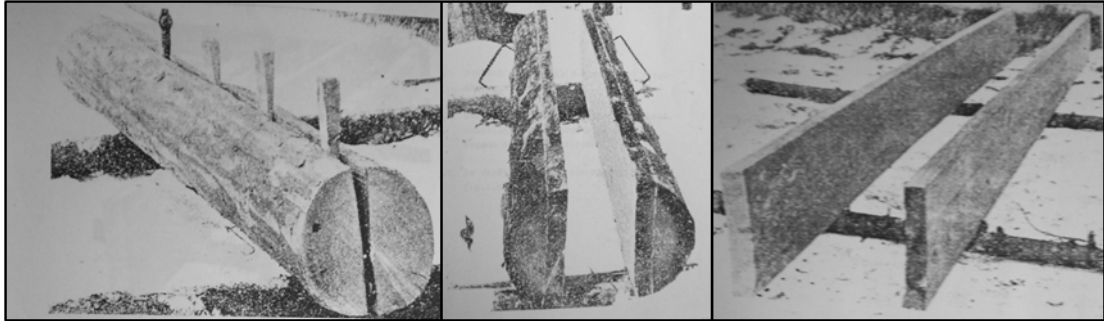


Figure 14: Different stages of splitting a log by hand using wedges and an axe. Here only two full planks were produced. Adapted from Monrad-Krohn 1976.³

It is unknown when and where the first water driven sawmill was introduced to Norway and several theories have been put forward. Bugge suggested that it was introduced to Bergen by Dutch traders, and identified a *Willom Sagere* - sawyer - who worked on the king's estate in the 1520s. He based his argument on the number of planks that Willom Sagere and his associates produced, for according to Bugge, they must have used a water-driven sawmill rather than a handsaw.⁴ This conclusion has been disputed, since the Danish word for sawyer (which was used here) would refer to hand sawn timber, and if this is correct, it does illustrate beyond doubt that teams of sawyers were also able to produce planks quite efficiently.⁵

Danckert Monrad-Krohn suggested that the water driven sawmills may have developed in Norway via Sweden in the late fifteenth century. Religious houses may have had some influence, in particular the Vadstena monastery of the Bridgettine Order in Sweden.⁶ These institutions had close contacts with the rest of Europe, and the earliest date he was able to verify for Norwegian sawmills in operation was 1503 for two sawmills in eastern Norway, near Moss, at Øvre and Nedre Brevig. The next mention of sawn boards and planks occurred twenty five

³ D. Monrad-Krohn, 'Vanndrevne oppgangssager: en etnologisk undersøkelse', [Waterdriven sawmills: an ethnological investigation]. Magistergradavhandling i folkelivsgransking, Univesitetet i Bergen, 1976.

⁴ Bugge, *Den norske træløsthandels historie*, pp348.

⁵ A. Næss, 'Sagbruk i Søndhordland indtil 1750' [Sawmills in Sunnhordland until 1750]. Sunnhordland årbok (Stord, 1919) p.4.

⁶ Monrad-Krohn, 'Vanndrevne oppgangssager.'

years later in 1528 in the county accounts for the small hamlets around Drammen, when 26 local farmers paid their fines and taxes with sawn timber.⁷

Not only farmers and religious houses exploited the new water sawmills, but royal officials and burgesses were also involved in the production and trade of timber. Following the Reformation in Norway (1537) all church property and monastic estates were taken over by the crown, which then became Norway's greatest landowner. These properties included sawmills and tracts of forestry. The wooded areas around Kristiana (Oslo) and Drammen proved to be particularly suitable for the production and export of timbers to foreign markets. The region around Kristiania already had a tradition of timber production and export prior to the introduction of the water driven sawmills, and here major landowners had played a key role in the timber trade. For example, Henrik Krummedike took over his father's property and ships in the 1520s and continued the family's tradition of exporting timber.⁸ He was able to benefit from the new technology of two water driven sawmills he inherited rather than having to rely on the more laborious method of splitting timbers by hand.

The *oppgangssag* was simple to construct and required little capital outlay.⁹ The main structure was built of wood available locally, and a single iron blade made in the local smithy. The earliest blades were often quite rough and thick with a cutting edge of approximately one cm. It took greater power to drive these earliest blades and limited many sawmills to only being operated during the flood season when there was enough water to force the blade through logs.¹⁰ The usual method for later sawmills was to collect water from a burn or small river in a dam and then release it when required to drive the water-wheel. A crankshaft transferred the power to the saw frame which then raised and lowered the blade attached to it (Figure 15).

⁷ Ibid., pp.95-97.

⁸ Bugge, *Den norske træløsthandels historie*, p252.

⁹ Lillehammer, 'Sagskurd og trelast i Ryfylke først på 1600-talet', *Frå bygd og by i Rogaland*, [Sawn timber and timber cargo in Ryfylke at the beginning of the 1600s, *From Hamlets and Towns in Rogaland*](1977) pp 30-31. Farmers could build a sawmill from their own freely available timber supplies, the blade was the most costly item and could be paid off by the sawing up of a few dozen timber logs which were then sold as boards, also Lillehammer, *The Timber Trade and the Ryfylke Farmers*, in "Timber and Trade" p.13.

¹⁰ Johan Schreiner: 'Det nye sagbruk', [The New Sawmills] in Bugge and Steen (eds), *Norsk kulturhistorie, bilder av folkets dagligliv gjennom årtusener, Bind III: Fra heksbål til frihetsild*, [Norwegian Cultural History Vol.III], (Oslo, 1938-1942).

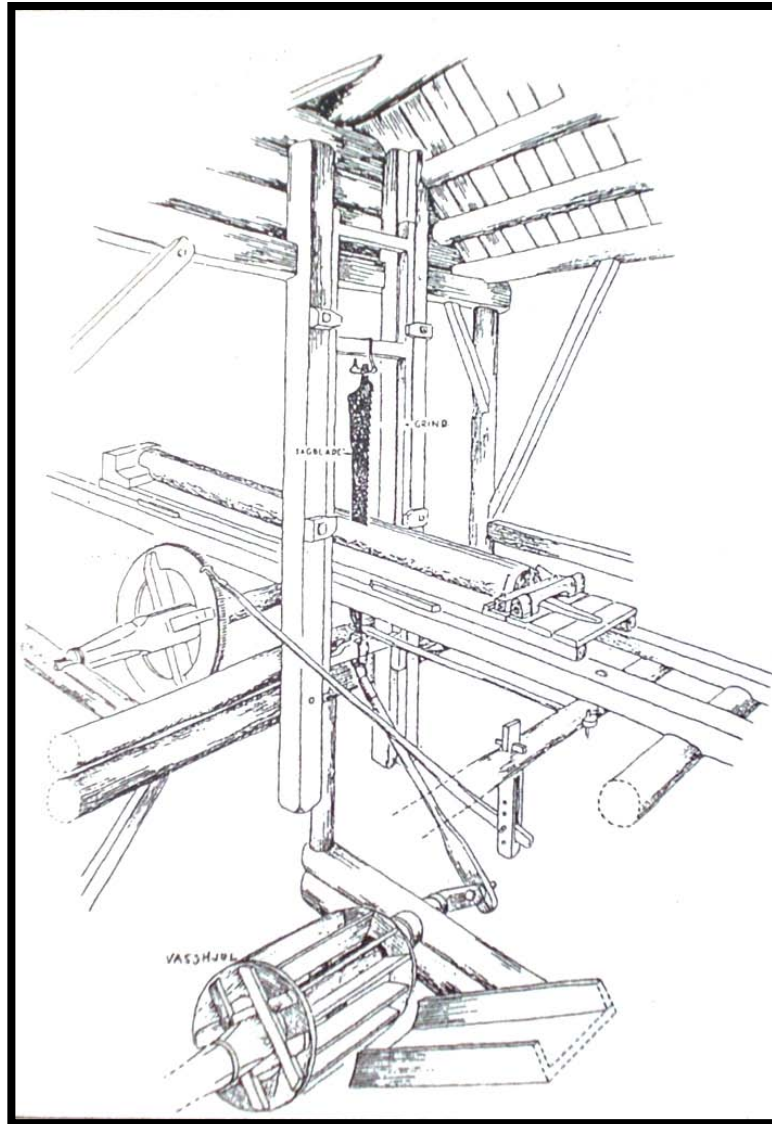


Figure 15: A typical *oppgangssag*, the frame consisted of four strong beams, joined together and measuring a few metres in height and about half that in width. The gate (saw) was placed in a frame within which it slid up and down. In the middle of the two horizontal beams the blade was fastened with the teeth pointing downwards. The blade only functioned on each down stroke. Some preparation was needed prior to sawing to ensure that the planks were straight; this involved hewing out/chopping a flat edge at the root end and top end. The sawyer had to ensure that all the sawn lines were parallel... The two outer boards with bark still attached were known as *bakhun* (in Norwegian). These had very little market value and were used for fencing materials or firewood.¹¹ After Arnevid Lillehammer/Arne Berg.

Norway's extensive coastline with its networks of fjords, coupled with high levels of precipitation meant that there were numerous places suitable for building sawmills at the mouths of small rivers flowing into the fjords. There were two seasons when sawmills could be used effectively: in the spring during the melting season and with the autumn flood waters. The spring was also a good time for seasoning wood because of the colder and drier air.

¹¹ Translated from a description of the last working water driven sawmill at Heleland circa 1930 in Johan Schreiner: 'Det nye sagbruk', *den Norske Kulturhistorie*, p.115.

During the sixteenth century, the new saw technology spread to other wooded areas of Norway. Sawmills were built, owned and operated by the farmers situated around the fjords of western Norway, where a steady supply of processed timber provided a welcome income for their small farms. The timber trade was generally carried out on a much smaller scale than the operations of the timber barons found further east at Kristiana and Drammen. Nonetheless, it was those areas of western Norway, particularly the districts around Bergen and Stavanger, which played a significant role in providing Scotland with timber.

By the beginning of the seventeenth century, Bergen's export of sawn deals had become a central element in the town's trade, generally in exchange for salt from Spain and Portugal.¹² Dundee's shipping lists show that salt was regularly imported from La Rochelle, and Scottish timber traders would have brought salt with them to trade and purchase timbers in Norway for their return journeys.¹³ One such area within Bergen's toll district frequented by Scottish ships was Sunnhordland. Local farmers had built sawmills at the water's edge where natural loading places nearby meant that timber could be sold directly to visiting skippers. By 1600, there were more than 50 sawmills in operation¹⁴, and a new tollhouse was founded at Eldøyvågen in 1590 to cater for the high turnover of timber sent out from this district. Scottish ships came from Orkney and Shetland¹⁵ both of which had long associations with Bergen and its environs, and also from Scotland's east coast harbours.¹⁶

The published accounts of Eldøyvågen from May 1st 1597 to May 1st 1598 listed the following ports of origin: Aberdeen, Dundee, Dysart, Leith (and Edinburgh), Musselburgh, Montrose, St. Andrews, St. Monans, Kirkcaldy, Preston (pans) and Wenstre (Anster-Anstruther). In total there were 42 vessels with an average capacity of twelve lasts although

¹² Anders Bjarne Fossen., *Bergens bys historie II*, (Bergen, 1979)p211.

¹³ The Dundee Shipping List Database, Dundee City Archives (2005) and also A.H. Millar, *The Compt Buik of David Wedderburne, Merchant of Dundee 1587-1630*, *Scottish History Society* 28 (Edinburgh, 1898).

¹⁴ A. Næss, 'Sagbruk i Søndhordland indtil 1750' [Sawmills in Sunnhordland until 1750]. *Sunnhordland årbok* (Stord, 1919) p. 15.

¹⁵ Nina Østby Pedersen, "Skotsk innvandring til Norge i tidlig moderne tid" [Scottish Immigration to Norway during the Early Modern Period], diss., University of Oslo, 2000.

¹⁶ D.Monrad-Krohn, 'Skogen, oppgangssagen og skottehandelen' [The forest, sawmill and Scottish trade], *Kulturhistorisk Vegbok: Hordaland* Nils Georg Brekke (ed), (Hordaland fylkeskommune: Vestkyst, 1993). p.98.

individual vessels ranged from five to 50 lasts.¹⁷ Typical cuts of timber bought by the Scottish skippers from here included boards/planks, nine ell beams, barrel hoops and firewood. Occasionally they purchased twelve ell beams,¹⁸ and regularly small pre-fabricated rowing boats with four or six oars, known as *færings* – fourerns, and *seksærings* - sixerns were also included in the cargo.¹⁹

The ships used by Dutch traders in the same period were much larger than the Scottish vessels and visited less frequently, with only 25 listed. On average their ships had a capacity of approximately 27 lasts, although the sizes of their vessels ranged between ten and 70 lasts. They appear to have been less interested in barrel hoops and tended to buy nine and twelve ell beams, as well as planks, *bekerholt*, and firewood.

In the early seventeenth century, despite their smaller size, the Scottish ships gradually increased their share in the percentage of the timber trade in Sunnhordaland. In 1597 their share was 43%, but by 1642 this had increased to 92.5% of the total amount of timber exported from the area (Figure 16).²⁰ Over the same period the volume of timber cargoes aboard non-Norwegian (Dutch, German and occasionally French and Spanish) vessels decreased from 57% to 9%, with Norwegian involvement never amounting to more than 8% and illustrating that by 1642 Scottish ships dominated the trade at Sunnhordland.

¹⁷ Translated and adapted from the tables originally published in Bugge, *Den norske trælasthandels historie* pp. 190-197.

¹⁸ Since these are Norwegian records the Norwegian ell length should be assumed.

¹⁹ A. Thowsen, 'The Norwegian Export of Boats to Shetland, and its influence upon Shetland boat building and usage,' *Sjøfarts Historisk Årbok* [Maritime History Yearbook] (Bergen, 1968).

²⁰ Næss, 'Skottehandelen på Sunnhordland' [The Scottish Trade in Sunnhordland], *Sunnhordland årbok* (Stord, 1920) p.33.

Year	Scotland (plus northern Isles)		Norwegian		Others	
	Lasts	% of total	Lasts	% of total	Lasts	% of total
1597	652	43			860	57
1610	1177	43	215	8	1381	49
1614	734	51	61	4	640	45
1621	1218	61.5	10	0.5	746	38
1627	1037	68	45	3	434	29
1639	511	91			50	9
1642	1679	92.5	136	7.5		

Figure 16: Volume of timber cargoes exported from Sunnhordland 1597- 1642, based on the surviving toll records from Eldøyvågen, adapted from A. Næss.

According to Næss the majority of exported timber consisted of sawn boards or planks, beams or baulks of between seven and 16 ells in length, and rafters or spars, preferably smaller ones known as *Hjeltesperrer* or Shetland spars. *Bekerholt* was bought largely by the Dutch traders; barrel hoops and firewood were often purchased in large quantities and used as dunnage to complete the cargoes.²¹

Another region on the west coast of Norway that had a vested interest in the timber trade with Scotland was the fjord area close to Stavanger in Rogaland known as Ryfylke. Here Scottish skippers regularly purchased cargoes from local farmers, often in exchange for grain.²² In Ryfylke alone, 100 sawmills are mentioned in the period 1600 to 1630,²³ and by 1630 the increasing numbers of ships arriving in the Ryfylke fjords led to the establishment of a toll house in the harbour at Nedstrand. The surviving customs records from Nedstrand demonstrate how frequently Scottish vessels sailed in to load up with timber; Figure 17 summarises the data from 1631 to 1640.

²¹ Ibid., pp.33-34.

²² Lillehammer, 'The Scottish Norwegian Timber Trade in the Stavanger Area in the 16th and 17th centuries,' in T.C. Smout (ed.) *Scotland and Europe*, (Edinburgh, 1986); 'The Timber Trade and the Ryfylke Farmers c.1500-1700,' in *Timber and Trade :Articles on the timber export from the Ryfylke area to Scotland and Holland in the 16th and 17th centuries*, (Fagrapport, nr 1: Lokalhistorisk Stiftelse, 1999), pp 6-23;

²³ Lillehammer, 'Sagskurd og trelast i Ryfylke først på 1600-talet', *Frå bygd og by i Rogaland*, p.31.

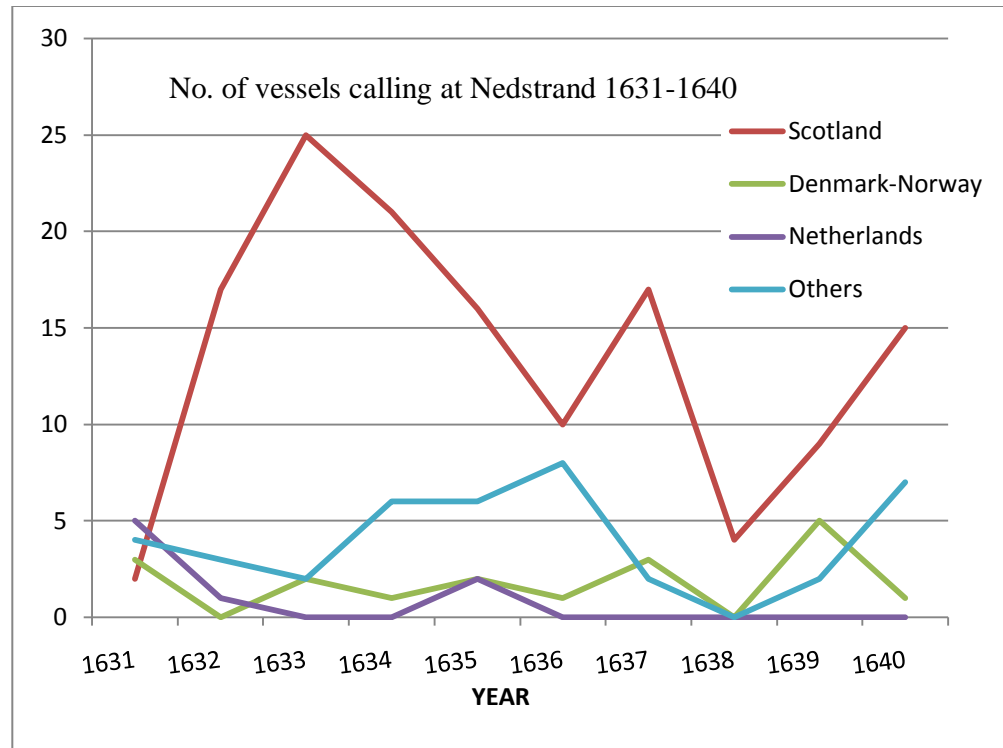


Figure 17: The number of ships which paid tolls for timber at Nedstrand 1630-1639 based on the toll lists.²⁴

During the 1630s, 136 Scottish ships called at Nedstrand accounting for 67% of the total. In 1633 their numbers amounted to 86% of the total ships and of these vessels 68% came from Fife harbours: Anstruther, Crail, Elie, Pittenweem, St.Monans, Largo, Kirkcaldy, Dysart, St.Andrews, and Leven. Anstruther was the most frequently named home port and accounted for 20% of visits, followed by Dundee which accounted for 13%. Only one vessel sailed from the west of Scotland (Glasgow) and the rest originated from the north east of Scotland; Peterhead, Aberdeen, Banff, Fraserburgh and Kirkwall. Additional harbours mentioned included: Montrose, Bo'ness, St.Johnstone (Perth), Leith and Ferry Port (on Tay). The capacity of Scottish ships varied from between four and 40 lasts. As at Sunnhordland, the Scottish ships were generally smaller than those from the Netherlands, which had capacities of up to 80 lasts and were specifically built for carrying large cargoes of timber.²⁵

In contrast to the Scottish trade, there were very few ships coming from the Netherlands during the 1630s. Even considering that their ships were capable of carrying greater volumes of

²⁴ Data translated from Nedstrand the toll lists, Karmsund Folkemuseum, Haugesund, Norway.

²⁵ Ibid..

timber cargoes, only eight ships in total for the whole period (*i.e.* 4%) suggests other factors may have come into play. One may have been deforestation; the more mature trees of greater dimensions were felled first and once these were no longer available, the Netherlands sailed to other areas for their preferred materials.²⁶ Another factor may have been further advances in sawmill technology that altered the demands of markets in the Netherlands. By about 1600, the Netherlands had adopted the use of several saw blades in the saw-frame, with sawmills driven by their more powerful windmills. This practice was widely adopted as it was more economic and greater numbers of finer planks could be cut from each baulk; it also meant that the Netherlands were most interested in purchasing unprocessed timber baulks rather than planks from Norway.²⁷ During the seventeenth century this meant that they tended to concentrate their trade with southern and eastern Norway where the larger-scale operations were found at Drammen and Kristiania.²⁸

The cargoes listed in the Nedstrand toll records reveal a sequence of development in the available timber products, the most sought after being pine boards or planks, and pine beams usually of nine or twelve ells. In the first half of the seventeenth century, a typical Scottish cargo would include pine deals, twelve ell pine beams, nine ell pine beams, barrel hoops and always a quantity of firewood (generally of birch wood). However, by the mid 1630s there was a steady increase in six and eight ell beams which according to Lillehammer were referred to as *skottebjelker* - Scottish beams.²⁹ At this time there was also a change in the Norwegian description of the nine ell beams, which were being described as “small” – *små/smaa* or “narrow” - *smale*. This certainly suggests that the local forests around Nedstrand had started to feel the impact of continuous exploitation with sawmills. By 1639, the previously plentiful twelve ell beams no longer appear as regularly or in such large quantities on the Nedstrand toll lists.

²⁶ Lillehammer, ‘Ætt og heim’ in *Lokalhistorisk Årbok for Rogaland 1987*, p.48.

²⁷ Jan de Vries and Ad van der Woude, *First Modern Economy: success, failure and perseverance of the Dutch economy, 1500-1815* (Cambridge University press, 1997) pp.301 and 378.

²⁸ Schreiner: ‘Det nye sagbruk’, pp.115-138.

²⁹ Lillehammer, *Timber and Trade*, p.18.

As the forests of Ryfylke became exhausted of the larger trees, and with the Dutch favouring timber baulks from further south in Norway, the number of sawmills began to decline. However, these developments did not deter the Scots, and as the name *skottebjelker* suggests, they continued to be interested in the pine beams produced in Ryfylke. According to Bugge and Lillehammer, the term became synonymous with six and eight ell sized baulks produced for the Scottish skippers.³⁰ The Dundee shipping list, however, records the continued import of larger nine and twelve ell beams from Norway into the 1650s. The Scottish ships probably sailed to other areas of Norway for this timber - either northwards to Bergen or Trondheim, where both major cities were supplied by a larger timber producing hinterland - or southwards to Agder, Drammen and Kristiana as the Dutch traders had done earlier.

Towards the end of the seventeenth century the technological advances made in the Netherlands had also started to reach the shores of the Baltic and the Gulf of Finland. Prior to 1670 the only product exported from the Gulf of Finland in any quantity was tar, but the spread of new sawmill technology gave these areas the opportunity to produce processed timber comparable with Norwegian timber exports – sawn timber planks and baulks – favoured by the Netherlands. Multi-bladed sawmills began to be adopted and were known as ‘Dutch’ fine blade sawmills, usually with two or more frames (Figure 18). In 1661 in the then Swedish district of Narva (present day Estonia) there was a single sawmill with two frames and ten blades. By 1671 there were three sawmills, each with two frames and a total of 60 blades. From the beginning of the eighteenth century, the numbers of multi-bladed sawmills continued to develop rapidly and were built at Viborg, Fredrikshamn and Helsingfors by German or Dutch craftsmen using blades that were imported directly from the Netherlands in a direct response to the increase in demand from markets in the Netherlands.³¹

³⁰ Bugge, p.348; Lillehammer, ‘Boards, Beams and Barrel-hoops: contacts between Scotland and the Stavanger Area in the Seventeenth Century’, in G.Simpson(ed.), *Scotland and Scandinavia 800-1800* (Edinburgh, 1990), p.104 ; Lillehammer, *Timber Trade and Ryfylke Farmers*, p18; .

³¹ Sven-Erik Åström, ‘Technology and timber exports from the Gulf of Finland, 1661-1740,’ in the *Scandinavian Economic History Review* Vol.XXIII, (1975) , pp. 1-14.

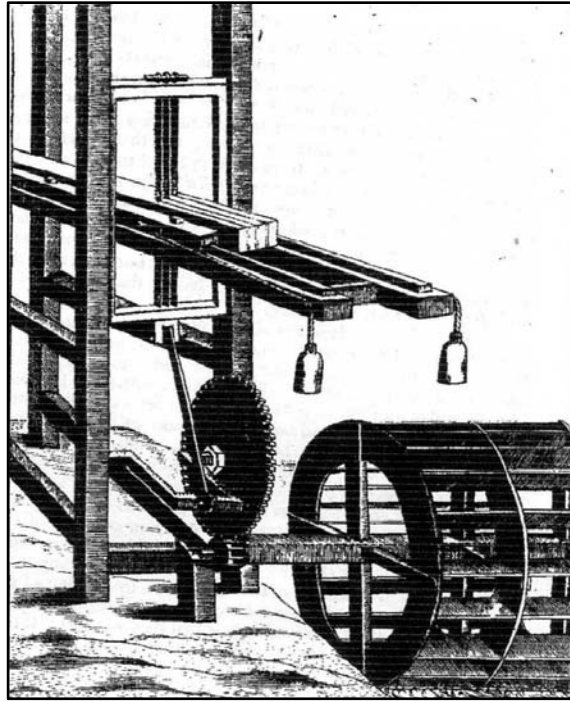


Figure 18: A diagram of what John Evelyn termed a 'Norway Engine or Saw-mill', an early example of a multi-bladed sawmill. He claimed this was also used in Switzerland and could be 'either moved with the force of Water, or Wind'.³² However according to Johan Schreiner it was not until 1714 that multi-bladed sawmills were introduced in Norway.

By 1660, the exploitation of Norway's forests had begun to raise some concerns with burgesses in eastern Norway. The most easily accessible timber along the coast and fjords had been depleted, and timber now had to be collected from further afield and floated down to the coast. Norway had not kept up with the advances in sawmilling technology, so protectionist policies were set up to try and slow down timber exports by initially limiting the export of undressed baulks.³³ This was a direct reaction to the increase in foreigners, particularly those from the Netherlands, who were now predominantly interested in exporting cargoes of baulks rather than planks, for processing in their own wind driven sawmills. For the Norwegian sawmill owners there was less profit in undressed baulks than in the sale of mass produced, ready made planks.

In 1688 a royal decree on the use of sawmills was passed, ostensibly to protect Norway's forests, although in practice handing the monopoly of production over to a few

³² John Evelyn, *Sylva or a Discourse of Forest Trees and the Propagation of Timber in His Majesties Dominions*, (London, Second Edition 1670) p.177.

³³ Schreiner: 'Det nye sagbruk', pp.115-138.

privileged sawmill owners in Østlandet (eastern Norway). At this time there were 1200 registered sawmills in the Sønnefjelds district of eastern Norway, but only 664 of these were permitted to continue in production after 1688. Essentially the legislation shut down the smaller sawmills run by farmers, leaving the larger sawmills run by wealthy burgesses. These remaining mills had to share a quota which in total was not to exceed around five million planks annually, in contrast to the 6.4 million planks previously exported from the area. Eventually a further downward revision to 3,350,000 planks was required by a further act.³⁴

The new regulations meant that the running of sawmills was now virtually state controlled, and favoured a few wealthy individuals, which led to the emergence in eastern Norway of a new class of wealthy forestry owners and traders known as the ‘timber nobility’. Although the decree impacted upon many areas of Norway to varying degrees, hardest hit were the townships in the east. The southern coast was less affected and the west coast - the areas around Bergen and Stavanger - and northern Norway - Trondheim and Romsdal - were hardly affected at all. This, according to Monrad-Krohn, demonstrated that these areas were not considered to be of any great importance to the national economy.³⁵ They were, however, of significant value to the Scottish timber traders who continued to visit the fjords of western and northern Norway.

It was not until 1714 that a Norwegian timber merchant from Kristiania introduced the use of multiple finer blades – *silkeblader* – for sawn timber. He applied to the king to ‘patent’ this invention for his own use for 20 years stating that the advantage of this method was that it only used thirteen logs to produce 1000 sawn planks, whereas the single, thicker blade used 18. The government agreed that this was an excellent means to help preserve Norway’s forests, but that it was something which should be adopted at all sawmills in order to benefit the whole

³⁴ Ibid., p.125.

³⁵ Monrad-Krohn, ‘Skogen, oppgangssagen og skottehandelen’[The forest, sawmill and Scottish trade], p.102-3.

nation. The only benefit the merchant received for his endeavours was an increase in the number of planks he was allowed to produce annually.³⁶

Despite the obvious advantages of both water and wind powered sawmills, this technology does not appear to have been quite so readily taken up in Scotland, even in its most primitive format. However, Robert Edward, Minister of Murroes referred to sawmills being used in the Grampians in his description of Angus c.1678,

And when as in time of war, the inhabitants of Angus cannot import timber from Norway, they supply themselves with any quantity of planks and logs from the neighbouring woods, on the west of the Grampians, where they have watermills, which unless obstructed by frost, are constantly employed in sawing the timber.³⁷

A number of sawmills are also mentioned in Anderson's *A History of Scottish Forestry*, including water mills and water courses on the River Spey sold by the Laird of Grant in 1630; "single daills and merchand daills" produced on the Balnagown estate in 1672 (from where the King's Master Wright James Baine purchased joists and deals); "sawmilnes" at Loch Rannoch producing deals in 1675; at Glenlyon where a dispute led to the sawmill being set on fire in 1677; a sawmill at Rothiemurchus in 1680; and the erection of a sawmill in Upper Deeside in 1695.³⁸

The technology for water driven sawmills had certainly reached Scotland by the seventeenth century, if not earlier, but there does not appear to have been such a widespread adoption of them as tools for processing timber as there had been in Norway. This was possibly due to a lack of the right timber and environmental conditions *i.e.* wind and water. The advantages of sawmills may have been recognised at Dundee where a windmill was recorded on the shore in the early sixteenth century.³⁹ However, a sawmill was not mentioned in a Parliamentary Act until 1695, when William Scott (deacon of the wrights 1692-94), a cabinet-

³⁶ Schreiner: 'Det nye sagbruk', pp.115-138.

³⁷ Robert Edward, *A Description of the County of Angus in the year 1678*. (Privately printed from second edition, 1880) p.6

³⁸ Loudon Anderson, *A History of Scottish Forestry*, Vol. I, (Thomas Nelson Ltd, 1967) pp 315-332.

³⁹ Pers.comm. Charles McKean, the windmill's function has not yet been confirmed as a sawmill.

maker and John Hislop⁴⁰, a wright, both burgesses in Edinburgh and members of Mary's Chapel,⁴¹ were permitted to erect a windmill at Leith,

...where great oak trees and other great timber may be brought in and landed from abroad for building of ships and other great works in the nation, which cannot now be done through want of skill and art of sawing such great timber as is proper for those works.⁴²

This privilege granted them '...the sole and only privilege of erecting and making use of the said sawmill, and enjoying the whole benefit thereof...' within a 15 mile radius of Leith for the following 19 years. The benefits of sawmills for processing timber, whether powered by water or wind, had finally been appreciated as an asset for Scotland's leading port.

The arrival of mass produced planking and standardised timber baulks from Norway in the late sixteenth and seventeenth century must have simplified or even made redundant many of the tasks previously undertaken by sawyers in Scotland. The advent of the wind driven sawmills in the Netherlands in the 1590s had met with massive opposition from the sawyers there who realised that mechanisation was a direct threat to their livelihood. The Amsterdam guild of sawyers obstructed the introduction of sawmills for decades, and prevented the cheaper imports of sawn timbers entering the city from other regions in the Netherlands.⁴³ There does not appear to have been quite the same adverse reaction in Scotland, although if there was opposition from local tradesmen and guilds, perhaps this was why initially Scottish sawmills were mainly put into operation outwith the main centres of commerce and trade, similar to Norwegian practice. This may be the reason why Edinburgh was so late in establishing a sawmill at Leith, with Dundee possibly a notable exception. If the windmill at Dundee was used for sawing timbers, as in the Netherlands, the town had quickly recognised the economic advantages of mass producing timber deals from baulks for use by the building trades. It may

⁴⁰ John Hislop was an apprentice to James Baine c.1675, see F. Bamford, *The Dictionary of Edinburgh Wrights and Furniture makers, 1660-1840*(London, 1983) p.41.

⁴¹ Edinburgh City Archives, SL34/1/1/1-3

⁴² K.M. Brown et al (eds.), *The Records of the Parliaments of Scotland to 1707*, (St Andrews, 2007), 1695/5/234. Date accessed: 16 May 2008.

⁴³ de Vries, and van der Woude, *First Modern Economy*, p.301.

also indicate that the wrights in Dundee were well organised and more influential, much earlier than their fellow craftsmen in Edinburgh.

CHAPTER 3: THE SCOTTISH TIMBER TRADE WITH WESTERN NORWAY



Figure 19: Loading timber in a northern port by Andries van Eertvelt (1590-1652). This scene shows timber being collected at “the woods” in a Norwegian fjord. These purpose built ships are from the Netherlands. On average they were twice the size of the Scottish ships and had gates/doors at the stem, stern and along the hull for loading long pieces of timber. The sawn boards or planks can be clearly seen in the foreground, being loaded onto the typical Norwegian *færing* or *seksæring* boats. © National Maritime Museum.

In order to understand the mechanics of ordering, purchasing and collecting timber cargoes from western Norway, this chapter considers the relationship between Norwegian sawmill owners, Scottish skippers and timber merchants. The contents of typical timber cargoes are examined to determine the preferred timber cuts demanded by the building trades. The use of timber following its arrival at Scottish ports should illuminate what types of structural timbers were required, and how Norway provided Scotland not only with mass produced sawn planks/deals, but also with standardised timber cuts that were specifically intended for use by Scottish wrights in building construction.

Generally vessels sailed from Scotland’s east coast ports during March or April and used two to three weeks to collect and load their cargoes from sawmills at various farms in the surrounding fjords (Figure 19). Sometimes they would make two or three voyages in the same year (unlike voyages to the Baltic), and the last vessels usually left the fjords in September or

October.¹ The majority of skippers sailed out from Montrose, Dundee, St.Andrews and the Fife harbours: Burntisland, Kirkcaldy, Dysart, Largo, St.Monans, Elie, Pittenweem, Anstruther and Crail, on ships of between five and up to 50 lasts (Figure 20). Occasionally smaller fishing vessels from four to seven lasts (eight to fourteen tons) also ventured across for timber.² The loading of any vessel, whatever its size, would have been based on utilising all available space. Thus it was advantageous for any carpentry work to have been carried out on timbers prior to shipping whenever possible to reduce wastage. Any remaining space was filled with bundles of firewood.

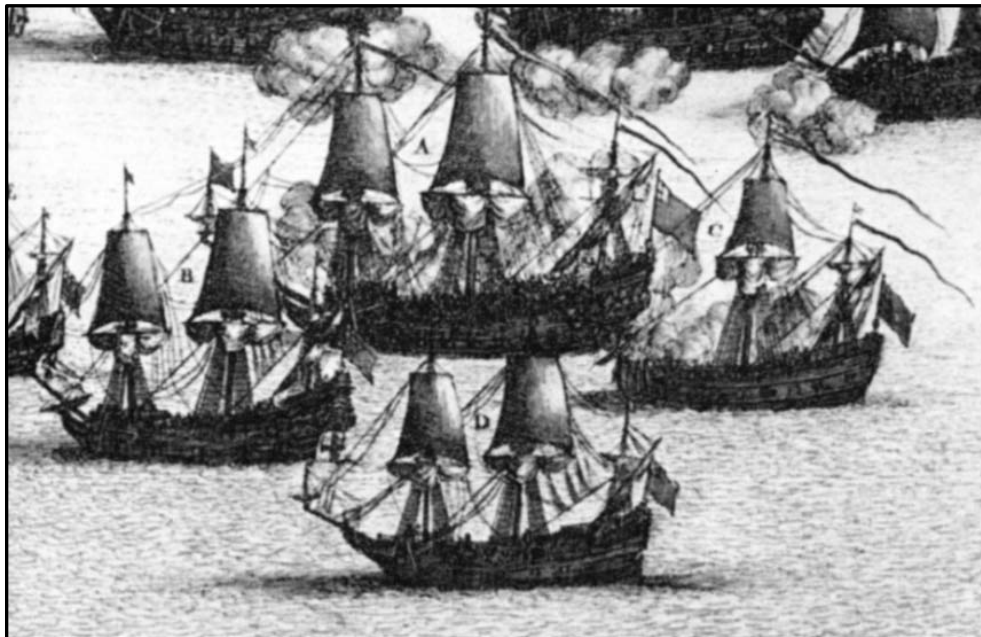


Figure 20: A typical Scottish merchant ship (D) from an engraving by Hollar c.1670, in Eric Graham's, *A Maritime History of Scotland 1650-1790*.³

Since the smaller Scottish ships came to western Norway in greater numbers than the larger Dutch ships, this trade became known locally as *Skottehandelen* or the Scottish trade. The trade relied largely on the knowledge and skills of the individual skippers involved, and many of the Scottish vessels, alongside the Dutch and other foreign ships, purchased and loaded their timber cargoes “at the woods”, *i.e.* directly from the local forest-farmers who had sawn the timber at their own sawmills. This continued throughout the seventeenth century, and its lasting

¹ Lillehammer, “Skottehandelen og Rogaland” p. 49.

² Lillehammer, “The Timber Trade and the Ryfylke Farmers c. 1500-1700”, p16.

³ Eric J. Graham, *A Maritime History of Scotland 1650 -1790* (East Linton, 2002) pp32-33.

legacy in Norway has been place names that indicate areas where this trade was carried out, and where ships would have loaded with their timber cargoes. For example, *skottebeleget* referred to a large rock that would have been used for mooring vessels while they waited to collect their cargoes. Hatlestrand in Kvinnherad district where many sailors from Scottish ships settled and married local girls became known as *Skottabygdo* or Scottish town.⁴ Some of those who settled in Norway also owned farms with sawmills: Henrik Blank was a Scot who settled in Rogaland where he owned a forest-farm. He had arrived in Ryfylke near Stavanger c.1580 and married a Norwegian girl. His son, Henrik Henriksson Blank, then continued the family tradition at Våga with a prosperous forest-farm with a sawmill.⁵

Bergen was another attractive destination for migrating Scots. There were business opportunities arising there following the demise of the Hansa merchants at the beginning of the seventeenth century, and close geographical and cultural links with the Northern Isles and east coast Scotland. According to Nina Østby Pedersen, 219 Scottish burgesses were listed in Bergen in the period from 1613 to 1711, but only ten English burgesses in the period from 1600 to 1660. Other nationalities who were also burgesses from 1613 to 1660 included 677 Germans, 432 Danes, 54 Swedes and 46 Dutchmen.⁶ The Scottish burgesses would have included merchants and skippers involved in the overseas trade, and the burgess community is indicative of a substantial trading community. This is certainly supported by the number of Scottish ships arriving at Bergen and further south in Sunnhordland for timber.⁷

Not all Scottish immigrants in Bergen were burgesses, the majority being weavers, mariners, artisans and coopers. At a higher social level, there were high ranking Scottish officers and their progeny in the Danish-Norwegian military forces. These included members of the Mowat family, originally from Orkney, who figured as Admirals in the Danish-Norwegian

⁴ Pedersen, "Skotsk innvandring til Norge i tidlig moderne tid" p.85.

⁵ Lillehammer, "The Timber Trade and the Ryfylke Farmers c. 1500-1700", p21.

⁶ Nedrebø, 'Fra Skandinavia's største by til Strilane sin hvoudstad', cited by Nina Østby Pedersen, "Scottish immigration to Bergen in the 16th and 17th centuries", in *Scottish Communities Abroad in the Early Modern Period*, A.Grosjean and S.Murdoch (eds), *Studies in Medieval and Reformation Traditions*, Vol. CVII (Brill, 2005).

⁷ Ibid., Pedersen, 'Scottish immigration to Bergen.'

navy. In the seventeenth century, Axel Mowat became one of the most successful timber merchants in western Norway; his lands were located in the fjord area of Sunnhordland.

Scots who emigrated tended to retain contact with their homeland, maintaining both familial and commercial networks that would have kept them well informed about the timber markets. The Mowat family's success is perhaps indicative of such advantages. Axel Mowat was a landowner whose considerable wealth and property in Norway was largely a result of the timber trade with Scotland.⁸ He was recognised as a Scot abroad by Sir Thomas Urquhart in the "Jewel" of 1652 who, knowing of his power and wealth, described him in a flattering but exaggerated manner as a viceroy, 'that he is as it were Vice-king of Norway.'⁹ His daughter Karen Mowat, who was the only heiress to what was the largest fortune in Norway, married the Danish nobleman Ludvig Rosenkrantz in 1658, who was commissioner for war for the king. In the 1660s, he started building his own grand house *Rosendal* at the Hatteberg farmstead in Sunnhordland, their wedding gift from Axel Mowat. In 1678 the manor at Rosendal was elevated to the status of barony- the only one of its kind in Norway.¹⁰

Very little is known about Rosendal's design and builders, but it is believed that Scottish craftsmen were involved with both. The house is a modest, well proportioned U-plan villa, with a courtyard enclosed by a high wall and entrance gate, similar to Argyll's Lodging in Stirling. The building appears to have been aligned with the mountain peak to the south, with the main entrance through the gate of the courtyard on the north front so when approached the house was seen beneath the magnificent backdrop of *Malmangernuten* (Figure 21 and 22).¹¹

⁸ A.M.Wiesener, 'Axel Mowat og hans Slegt' [Axel Mowat and his kinsmen], in *Bergens historiske Forening*, nr. 36 (Bergen, 1930) pp91- 117.

⁹ Sir Thomas Urquhart, *Eskybalaaron: or, The discovery of a most exquisite jewel*, (Ja: Cottrel, 1652) p.70.

¹⁰ Rosendal has been preserved by the state and is open to the public; the library (probably the former Withdrawing Room) is now the only room which retains its original seventeenth century interior, although the layout of the rest of the building is little changed. See www.baroniet.no/en and also Carsten Hopstock og Stephan Tschudi Madsen, *Rosendal Baroni og Bygning* [Rosendal Barony and Building], (Universitetsforlaget, 2002).

¹¹ Ibid., p.20.



Figure 21: Rosendal, Sunnhordland built during the 1660s by Ludvig Rosenkrantz husband of Karen Mowat.
© www.baroniet.no/en

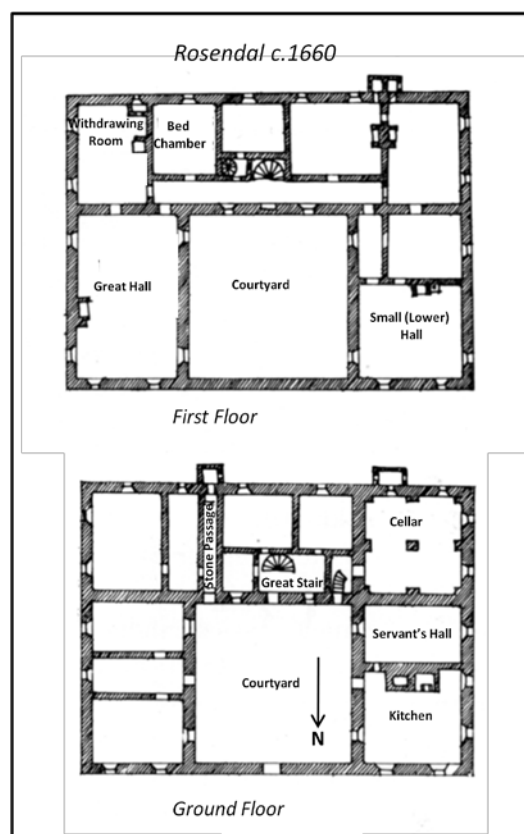


Figure 22: Reconstruction of original Rosendal's layout c.1665 (adapted from *Rosendal Baroni og Bygning*).

The design may have been executed by Rosenkrantz himself, but it has been suggested that the master mason or master craftsman was Scottish. This would certainly have been a possibility given the close ties the Mowat family had with Scotland both by kinship and the

timber trade. The close proximity to Bergen with its established Scottish community and tradition of builders coming from Scotland to work there from the sixteenth century onwards also supports this.¹² Andrew Smith, a master craftsman born in Scotland c.1620, has also been associated with work at Rosendal. He was a woodcarver and furniture maker (possibly also architect) who trained in Bergen and settled in Stavanger where he carved a new pulpit for Stavanger Cathedral c.1658.¹³ The surviving, albeit sandstone, fireplace at Rosendal dated 1665 in what was probably the Chamber of Dais, has decorative carving reminiscent of Smith's woodcarvings and has been recognised as evidence of his stylistic influence at Rosendal (Figure 23).¹⁴

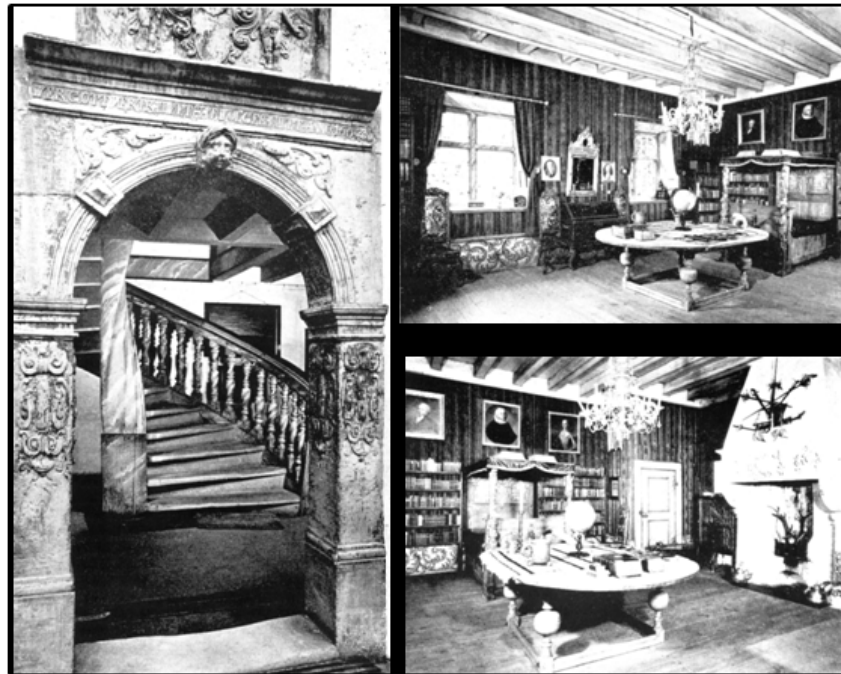


Figure 23: The spiral timber staircase at Rosendal and the withdrawing room, with fireplace dated 1665. Photos: © A.Bugge from Rosendal Baroni og Bygning.

¹² A.Espeland, *Skottene i Hordaland og Rogaland fra aar 1500-1800* [The Scots in Hordaland and Rogaland from 1500-1800], (Norheimsund, 1921) pp.8-11. The craftsmen are referred to as “bygmestre” or building contractors and included plasterers (perhaps also meaning bricklayers) and sawyers or carpenters.

¹³ Dorothea S.Platou, *Anders L.Smith, en norsk billedskjærer fra 1600 årene* [Anders L.Smith, a Norwegian Woodcarver from the 1600s], (Stavanger, 1928) and also Olliver Smith, *Andrew Lawrenceson Smith..mannlige etterkommere in Norge og Danmark* [Andrew Lawrenceson Smith...male descendants in Norway and Denmark], (Oslo,1943).

¹⁴ Hopstock og Madsen, *Rosendal Baroni og Bygning*, p.33.

Timber Cargoes

Pine beams, planks and trees

A typical example of a cargo of timber collected from the forest-farms of western Norway is provided by a voyage taken in June 1617 by skipper Andrew Westerton, when he sailed from St.Andrews into the Boknafjord of Ryfylke in Rogaland (near Stavanger) with his ship of fifteen lasts (30 tons). It took 16 days in the surrounding areas of Hylsfjorden and Saudafjorden to load timber, which he collected from six different farmers and sawmill owners. His cargo included “one hundred cut boards” and one half hundred nine (60) ell pine beams from the sawmill at Lindvong; from Rasmus Selland one half hundred pine beams; from Tore Vidvei one half hundred beams and one fathom of firewood; from Orm Drarvik two dozen pine beams and two fathoms of firewood; from Hallvard Fatnes two fathoms of firewood and his final purchase was 2000 barrel hoops from Per Ås.¹⁵ On the 19th June he paid his dues at the Nedstrand tollhouse and sailed out of the Boknafjord.¹⁶

A similar voyage was taken by Walter Angus from Aberdeen, who arrived with his ship of 20 lasts in the Ryfylke fjords in April of 1621 and spent ten days collecting different types of timber products from various sawmills. His cargo included: seven dozen twelve ell beams, thirteen dozen nine ell beams, 11,000 hazel barrel hoops and six fathoms of firewood.¹⁷

Similar timber cargoes arrived at Dundee in the early 1600s as can be found in the Dundee Shipping Lists. Although up until 1613 the cargo descriptions are simply recorded as timber and fuel, later entries contain much more detailed descriptions of what was being imported. In 1614, 24 ships arrived from Norway between April and October, of which two had made three trips; five took two, leaving eight vessels making the journey only once. Those that sailed three times were the *Lioness*, skippered by Hay who sailed in April, June and August, and the *James*, skippered by Patrick Scott, who sailed in May, August and September. On five

¹⁵ Quantities used equalled the following: 100=120, half hundred = 60,dozen = 12, fathom =2.23 m³, Norwegian ell =63.3cm; 9 ells = 5.7m, 12 ells = 7.6m. One last = appox 2 tons.

¹⁶ Lillehammer, “Sagskurd og trelast...” translation of text p.27.

¹⁷ Brandal, “Skog, sager og trelasthandel”, p84.

occasions vessels are listed as arriving on the same day indicating that they had sailed across from Norway together.¹⁸

All but four of the 24 cargoes included sawn boards or planks, and all bar five firewood, usually birch wood. Pine beams or baulks in nine and twelve ell lengths were most commonly imported, with only one cargo listing fourteen and 18 ells.¹⁹ A comparison with the Ryfylke toll records for 1614 indicated that pine beams purchased by Scottish skippers and recorded by Norwegian officials were either nine or twelve ells in length, which implies that those similarly described at Dundee were probably measured in Norwegian ells.²⁰

Significant quantities of trees and fir timbers were also imported to Dundee, sometimes referred to in the DSL as long, short or small. They arrived in quantities of between 100 and 500 pieces, with one cargo of 3000. Trees were probably baulks which had not been processed to any great degree, and are not referred to by dimensions. At most they may have been roughly squared and the bark removed. Fir timbers were probably similar, but seem to have been specifically described as being of fir *i.e.* pine, although there was only one instance of oak trees recorded in the period from 1614 to 1650.²¹

Oak baulks, klapholt, knapholt and knees

Oak imports from Norway are mentioned much less frequently than pine, and this was probably due to restrictions placed on its export. Just prior to the outbreak of the Seven Years War, an embargo was placed on the export of oak from Norway in 1562, as it was needed for the Danish-Norwegian navy. More specific restrictions were laid down in 1590, when a ban was introduced on the export of oak baulks longer than twelve Norwegian ells.²² This ruling applied specifically to the Scots, English and Dutch, who were at that time held responsible for the

¹⁸ Dundee Shipping List: Database.

¹⁹ Norwegian ells (63.3cm) or Scottish ells (94cm): since the standard Scottish ell was not officially accepted until 1661 it is likely that Scottish skippers would have used the local Norwegian units of measurement, and a comparison with the Ryfylke toll books seems to confirm this. It would seem logical then to deduce that the timber being landed at Dundee was calculated using the Norwegian ell *i.e.* nine ells equalled 5.7 metres and twelve ells equalled 7.6 metres.

²⁰ Data translated from the handwritten transcriptions of the toll lists, Karmsund Folkemuseum, Haugesund, Norway.

²¹ See 1639 in the Dundee Shipping List: Database.

²² Bugge, *Den norske trælsthands historie*, p.205-221.

perceived “ruining” of Norway’s supply of oak trees. The demand for twelve ell lengths had led to the felling of any trees between 16 and 26 ells (10-16m), which were then shortened to the favoured twelve ells for the export market and consequently destroying the woods through wastage and inefficiency. The 1590 ruling clearly stated only trees that measured twelve ells from the root to the base of the tree’s crown were to be felled for export. Local officials were no longer to ‘turn a blind eye’ to illicit activities and anyone found disobeying was to be severely punished.²³

Despite the earlier embargo on oak exports, on 9 September 1585 Dundee’s town council received permission from the Norwegian authorities to import a ship load of oak timber from Norway for building work on a church in the town.²⁴ The DSL for 1614 also reveals that one third of the vessels that imported timber from Norway to Dundee contained oak in their manifests, which included “aiken tymer”, “corbillis” and “crwket tymber.

Of eight vessels leaving Nedstrand in 1630 with oak timbers, five were from the Netherlands, one came locally from Stavanger and two from Scotland. The Dutch between them bought 636 small oak knees six inches thick – almost certainly for shipbuilding - and 360 small barrel knapholt (barrel staves). The Stavanger skipper and one of the Scottish skippers from Crail also bought oak barrel staves. The other Scottish skipper, also from Crail, bought ‘100 small krumholdt five ells long and 5 inches thick’; crooked timbers used for ship building and repairs.²⁵ According to the DSL, oak knapholt, laths, spars and trees also arrived on cargoes from Norway.

During the same period, not only were timber exports restricted from Norway, but in Scotland restrictions were placed on grain exports. This was the only commodity that could be used in exchange for Norwegian timber, and seriously restricted the activities of Scottish merchants involved in the timber trade. However, a number of dispensations were granted for those who required timber for their building works in Scotland. In 1631 Andrew Fraser of

²³ *Norske Rigs-registranter III*, p.148.

²⁴ *Norske Rigs-registranter II*, p.619.

²⁵ Data translated from the handwritten transcriptions of the toll lists, Karmsund Folkemuseum, Haugesund, Norway.

Stanywode was building his great house at Muchalls (later Castle Fraser), but his own lands had insufficient timber for the roof. He needed to import timber from Norway, but knew that in Norway at that time it was strictly forbidden to export timber without importing victuals as payment for the timber goods. He requested permission to send his factor and servants with ten chalders of wheat to Norway.²⁶ Also in 1631, Sir Thomas Urquhart of Cromarty sent a similar request for timber for building work, probably undertaken at either Craigston or Cromarty.²⁷ Both of these dispensations were granted on the basis that neither Fraser nor Urquhart's own lands were able to supply suitable quantities or types of timber. At the same time, a further dispensation was made to David, Lord Carnegie (subsequently created 1st Earl of Southesk in 1633) who requested timber from Norway for repairs and building work (for either Kinnaird or Leuchars Castle) also in exchange for 'ten chalders of beir, meal and malt.'²⁸ This evidence shows that restrictions were generally adhered to, but exceptions could be made when structural timber was required from Norway for specific building works. It is also likely, as with most trade, that some smuggling took place as well.²⁹

Additional timber products

Timber shipments to Dundee from Norway were not restricted to pine and oak, but also included spruce, alder, ash, birch, elm and hazel.³⁰ Products from these included: barrel staves (of both oak and pine), hazel barrel hoops or bands (often described as *steingis*), and birch firewood bought ready-cut for burning – possibly for use by baxters. A number of tools and components such as awls, spokes, stakes, trenails and axle trees were also imported.

²⁶ Bugge, *Den norske trælasthandels historie*, p.205-221, and *Register of the Privy Council*, Fol.180,a;Fol. 186, b; Fol.187,a. H.Slade, "Craigston Castle, Aberdeenshire" in *Proceedings of the Society of Antiquaries of Scotland*, Vol.108 (Edinburgh, 1977), p.273.

²⁷ Pers. Comm. Matt Davis re: building of Fraser and Craigston.

²⁸ *Register of the Privy Council*, Fol. 186, b.

²⁹ Brandal, 'Skog, sager og trelasthandel'[Forests, Saws and Timber Trade], p.88 and Steinar Kjærheim, 'Norwegian Timber Exports in the 18th Century: A Comparison of Port Books and Private Accounts', in *Scandinavian Economic History Review*, hf.2 (1957), p189. According to Kjærheim there is a well founded scepticism about the information found in Norwegian port books and by the 1950s customs fraud became a specialist field of research in Norwegian economic history.

³⁰ Dundee Shipping List: August 1614

Imported *split timber* or *cuttet tymbber* indicates that there was still a demand for substantial thick boards- *huggenbord* - and probably also squared trees or baulks as opposed to those cut by sawmills. The description *sparris* included masts, yards, booms, gaffs, and poles of moderate length and thickness.³¹ *Skowis* – strips of wood for wattle work³² was the only timber item shipped by (Patrick) Scott on his third and last voyage in September 1614 with the *James* and may have been used for making partitions, or for plastering work.

Such timber cargoes, whether leaving the fjords of western Norway or entering Dundee, show quite clearly the types and cuts of timber that were being purchased to meet demands in Scotland. The preferred timber cuts were pine baulks of nine and twelve ells, and large quantities of deals (planks). Imported oak was probably for use mainly in shipbuilding and repairs, although oak corbels and *klapholt*/*knapholt* was certainly used in building work. Oak corbels were used to support beams and at Gardyne's Land in Dundee oak lintels have been found over windows and doors, beneath the internal stone corbelling.³³ *Knapholt* was used for the balusters of the great stair at Panmure, Angus (pp.201-203).

The Nedstrand toll lists indicate that the supply of nine and twelve ell beams/baulks had already started to decline during the 1630s. The beams, when of nine or twelve ells in length were then described as poles (*spars*) rather than beams, and as being narrow or small. Occasionally these are also referred to as nine ell *skotsesperer* indicating the preference of the Scottish skippers and merchants. Between 1631 and 1640 longer lengths of fourteen and 16 ell timbers were seldom bought. When they were bought they were again described as narrow in the Norwegian records. By 1633 the dimensions sold from the Nedstrand area were usually six or eight ell lengths.³⁴ However, at the same time nine and twelve ell baulks continued to arrive into Dundee, with the numbers increasing in the 1640s, demonstrating that supplies were still readily available elsewhere in Norway (Figure 24).³⁵

³¹ *Oxford English Dictionary Online* (Oxford, 2008) Accessed 19 May 2008.

³² Bugge, *Den norske trælasthandels historie*, p.219.

³³ A.Crone, Gardyne's Land, Dundee: dendrochronological analysis of the structural timbers, (AOC Archaeology, 2002).

³⁴ Data translated from Nedstrand the toll lists, Karmsund Folkemuseum, Haugesund, Norway.

³⁵ Dundee Shipping List: Access Database (Dundee City Archives, 2005).

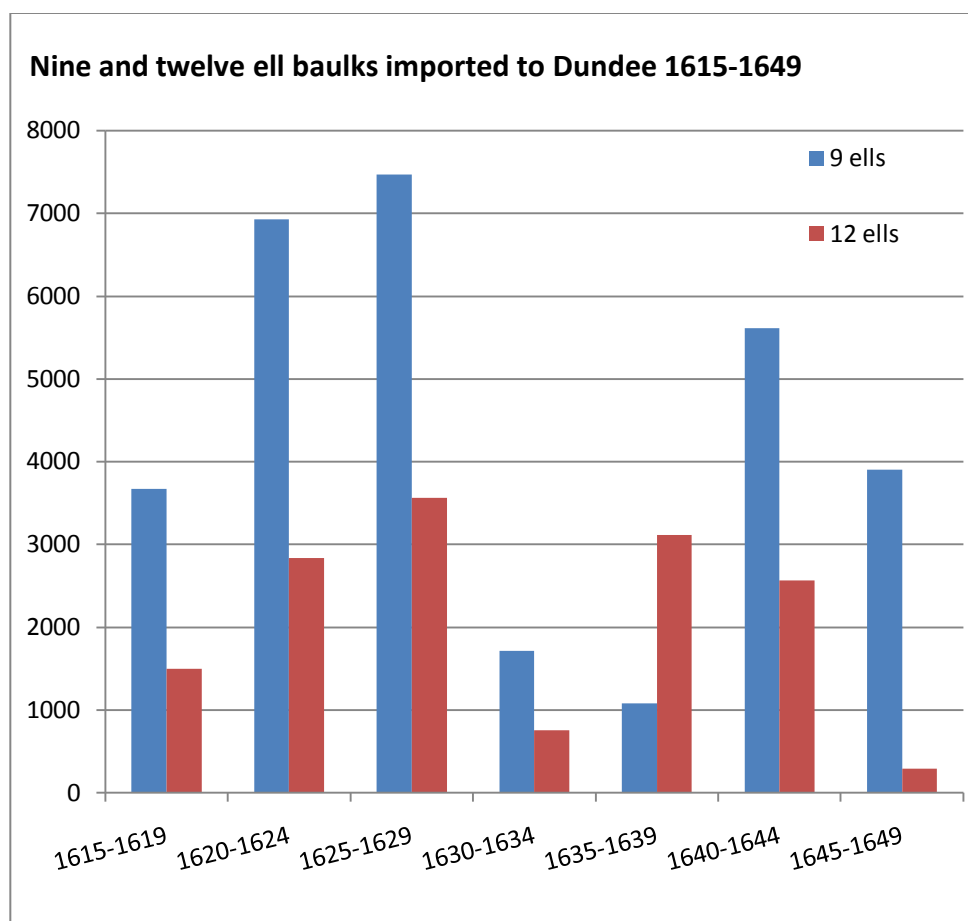


Figure 24: Nine ell and twelve ell timber baulks imported to Dundee 1615-1649 as recorded in the DSL. A marked decline in imports can be observed in the 1630s, and corresponds with the decline in these timbers being available from Ryfylke.

Although *skottebjelker* of six and eight ells were considered as important Scottish imports by Lillehammer, there is surprisingly, no mention of eight ell beams or baulks in the Dundee Shipping List at all, and only a very small number of six ell beams (in total 200 for the period 1645-1649) in comparison to the large numbers of nine and twelve ell beams which regularly arrived from Norway. Were eight ell lengths landed, but with a different description? This seems unlikely since two, six, ten, fourteen, 16 and 24 ell baulks are all mentioned specifically, but never eight ells. Scottish ships that bought eight ell lengths at Nedstrand came from Aberdeen, Peterhead, Banff, Montrose, Dundee, St.Andrews, Leven, Anstruther, Pittenweem, St.Monans, Elie, Kirkcaldy, Bo'ness and Leith. If the eight ell *skottebjelker* were not landed at Dundee did they enter these other named harbours? Were these dimensions in demand for the more modest dwellings found in Scotland's smaller burghs? Does the term

skottebjelker refer to them as being Scottish beams or something else? Further examination of the Nedstrand toll lists from the 1640s indicate that it was not only six and eight ell beams or baulks that were described using Scottish or Scots as an adjective, but also seven, nine and twelve.³⁶ In addition, *schotte/schotse* is often used in conjunction with *fürre* – pine. Descriptions of similar lengths are also mentioned in the same cargoes, but without the prefix *schotte/schotse*. Perhaps the descriptions in the toll lists are actually referring to a specific species (*i.e.* Scots Pine)³⁷ and not the identity of the purchasers, *schottefürrebielcher* should be translated as Scots Pine beams and not Scottish pine beams and it may have been a way to differentiate between spruce timbers (*gran*) and Scots Pine (*furu*).

Skippers and merchants

In spite of the decline in the availability of nine and twelve ell baulks from the Ryfylke area during the 1630s, collecting timber “at the woods” in Norway continued to be economically viable into the later seventeenth century.³⁸ Skipper Alexander Gillespie from Elie on the Fife coast kept a logbook dated from 10 April 1662 to 31 July 1685, which detailed his voyages not only to Norway, but also to the Baltic, London, Rotterdam and Bordeaux.³⁹ His journal covers 24 years, during which time he completed nine voyages to Norway for timber. In the 1660s he favoured the Nedstrand area for collecting timber - described by Gillespie as Ceattell- whereas he sailed further north to Eldøyvågen in Sunnhordland in the 1670s and 80s.⁴⁰

The information recorded by Gillespie allows us to picture quite clearly the practice of purchasing timber ‘at the woods’, a practice that had remained practically unchanged from the

³⁶ Data translated from Nedstrand the toll lists, Karmsund Folkemuseum, Haugesund, Norway.

³⁷ Scots Pine (*Pinus sylvestris*): The name derives from Latin *pinus* via French *pin* (pine); in the past (pre-18th century) this species was more often known as "Scots Fir" or "Scotch Fir" (from Danish *fyr*), but "fir" is restricted to *Abies* (spruce) and *Pseudotsuga* in modern English. Other names sometimes used include Riga Pine and Norway Pine, and Mongolian Pine for var. *mongolica*. "Scotch Pine" is another variant of the common name, used mostly in North America. The lumber or timber from it is also called red deal. http://en.wikipedia.org/wiki/Scots_Pine, Accessed 9 February 2009

³⁸ Smout, *Scottish Trade on the Eve of Union*, p.155.

³⁹ Paula Martin, *Skipper Alexander Gillespie* (transcription of log book detailing voyages including Norway 1662-1663). St.Andrews University Archives.

⁴⁰ *Martin*, Gillespie's log book pp. 58-59.

late sixteenth century. Although the place name ‘Ceattell’ used in Gillespie’s logbook had been attributed to Tittelnes, a place on the approach to Sunnhordland, recent research has established that Ceattell actually referred to Nedstrand in Ryfylke.⁴¹ There are a number of reasons for this revision. Firstly, Gillespie recorded that he ‘...clired our veshell...’⁴² which could not have been done at Tittelnes because there was no toll house there to pay dues. Secondly all the individuals mentioned by Gillespie in the vicinity of the ‘Ceattell’ are from the Ryfylke area,

...we cam to the Kettell to ane anker it being Wedenesday of the weeke
 Upon the 6 of this month of Junieus we cam to our loading
 Marke it being above Birkrenesse, the bouer [farmer] his name is:
 Knoyd Hansone Hanse, Stokes his sone, who is now deade cales him:
 Knoayd Loaura Upon the 17 of junieus we cam from our, loading marke...⁴³

The people mentioned by Gillespie in his logbook have all been identified: Johannes Stokka (Hanse Stokes) was a prosperous farmer, timber trader and local official who lived at the farm Stokka in Vats. He died in 1658, four years before Gillespie visited Knut Hansen who was his second son. His surname Hansen is probably a shortened version of Johannesen *i.e.* son of Johannes. He is also known as Knut Lovra because he had rented a farm at Lovra since 1644. As the second son, his elder brother probably inherited the farm at Stokka following their father’s death, and it was the custom in Norway that when people moved they usually took the place name of where they lived as their surname. Knut Lovra also had his own sawmill.

Through these individuals it is then possible to follow the route taken by Gillespie. ‘Birkrenesse’ was on the sailing route into Økstrafjorden, a natural place to stop before continuing up the fjord.⁴⁴ Gillespie’s use of ‘above’ signified north of Barkaneset, and in Økstrafjorden there is a place called Sagjå where water flows out from Slåttevatnet. On the east of this stood the Lovra sawmill, and on the west stood the Økstra sawmill. The Lovra sawmill stood on ground that belonged to the Romsbotn farm owned by Knut Lovra/Hansen. The Økstra sawmill stood on ground owned by his son Gudmund Lovra from 1689. The saw miller who

⁴¹ Pers. Comm. Endre Elvestad – marine archaeologist – Stavanger Maritime Museum. This also confirms Smout’s earlier work which also considered Gillespie’s destination to have been the fjord area around Nedstrand. See Smout, *Norwegian Timber Trade before 1707*, p.53.

⁴² Skipper Gillespie, p.9.

⁴³ Ibid., p.4.

⁴⁴ Ibid., p.4.

worked at the Lovra sawmill lived at the Romsbotn farm and the water for the mill was channelled along a 418 metre long mill-race. In 1662, the same year that Gillespie visited, Knut Lovra paid tax on the production of 1200 planks.⁴⁵

Why did Gillespie choose to sail to Sunnhordland rather than Ryfylke in the late 1660s, 70s and 80s? Was it because the types of timber cut preferred by Scottish merchants and builders were no longer available in Ryfylke? An examination of the Nedstrand toll lists of the 1660s confirm that timber products were still being regularly exported, and often included seven, eight, twelve and 14 ell baulks, albeit in somewhat reduced quantities and described both as single and double. In the 1660s, however, the format of the Nedstrand toll lists changed, so they no longer provide us with the same detailed information as in the 1630s and 1640s. The later Nedstrand tolls only recorded a summarised account of the annual timber exports from Ryfylke, but what is clear from these is that there was an increase in the diversity of timber cuts being sold, often with their dimensions listed alongside. The skipper's name, his vessel and its capacity, homeport and a breakdown of each individual's cargo were no longer documented. Thus the only physical trace that Gillespie might have left behind from his later voyages might be some ballast in the harbour from his journey over from Scotland.

The summarised accounts for timber exported from Nedstrand in 1668 included products such as pine planks, eight, twelve and fourteen ell beams/baulks, barrel hoops, birch firewood and hazel, as would be expected from the Ryfylke farms and sawmills. In addition there were the following cuts and products: double and single *juffers*, birch logs/beams of one, two, three, four, and seven ells, oak planks of six ells, *raffte bielcher* of seven ells, *kapper sparer* – cabers⁴⁶, oak [tre]-nails, oak knees 7" squared, pine knees 7" squared and single twelve ell beams. Although the pine and oak knees were probably intended for shipbuilding or repairs, most of the other timber cuts would have been utilised by the building trades for construction as rafter couples, tie-beams, collar beams, ashlar posts, sarking, flooring joists and planking. The

⁴⁵ Pers.comm. Endre Elvestad - marine archæologist- Stavanger Maritime Museum.

⁴⁶ Caber – *Sc.* A pole, or spar, usually consisting of the stem of a young pine or fir-tree, used in house-carpentry, scaffolding, etc. *Oxford English Dictionary Online*. Accessed 19 May 2008.

oak trenails could also have been used for either shipbuilding or by the building trades, for nailing slates to roofing, or more likely for pegging the component parts of roof structures together. Thus Norway was providing Scotland not only with mass produced sawn deals, but probably also with timber specifically intended for the building trades.

So why *did* Gillespie choose to sail to Sunnhordland when these goods were still available in Ryfylke? One possible reason was an event which took place at Nedstrand on 14 September 1666.⁴⁷ That night a foreign ship was seen sailing in towards Nedstrand, and the Customs Officer sent out a boat to investigate. It was a Scottish privateer heading straight for the tollhouse, and the inhabitants of Nedstrand had little warning to prepare for an attack. The privateers - led by Thomas Bennet - made off with the customs officer's money chest, set fire to the customs house, took a number of hostages and plundered all the properties in the locality. The toll house building was totally destroyed along with all the stored goods.⁴⁸ It would not be surprising if, after this incident, Scottish vessels were no longer quite so welcome at Nedstrand. Moreover it may have been safer to sail to Sunnhordland to avoid being attacked by privateers themselves. Despite these risks, Gillespie continued his voyages, recording detailed descriptions of the routes he took, and demonstrating a familiarity and understanding of the Norwegian waters that he needed to negotiate. Gillespie's voyages were probably very typical, his skills and knowledge the result of a long history of trading between Scotland and Norway. His journal confirms that personal contacts between skippers and either merchants or farmers in Norway existed, and more importantly for this study, skippers came equipped with orders for specific types and lengths of timber.

Gillespie's decision to favour Sunnhordland may also have been influenced by the increasing authority exercised by burgesses of Stavanger over the timber trade after 1672.⁴⁹ Anyone importing goods into Ryfylke now had to land their produce at the Stavanger customs house first, before sailing into the fjords to purchase timber, which would then be accounted for

⁴⁷ Johannes Elgvin, *En By i Kamp; Stavanger 1336-1814*, [A City in Battle, Stavanger's History], (Stavanger, 1956) p.165.

⁴⁸ Pers. comm. Endre Elvestad – marine archaeologist – Stavanger Maritime Museum.

⁴⁹ Lillehammer, 'Skottehandelen og Rogaland: By mot land på 1600-talet', *Ætt og Heim* 1987, p.53.

at the Nedstrand tollhouse. The Stavanger burgesses gradually eroded any trade advantages that Nedstrand had had and the Nedstrand tollhouse was eventually closed down in the 1680s.⁵⁰ The practice of collecting timber from the woods of the Stavanger fjords was finally brought to an end for Scottish skippers in 1717, when a royal decree was passed forbidding the activity. Thereafter all timber from the outlying farms had to be shipped to Stavanger before it could be bought by foreign skippers, which resulted in a rapid decline in the timber trade from the area. By 1733, the timber trade of the previous century was considered to be over in this area, the time before 1717 subsequently referred to as the *skottetiden* - the Scottish Period.⁵¹

The Watson papers, also at St. Andrews University, provide further useful information on the procedures involved in the seventeenth century timber trade.⁵² The Watsons were a family of merchants based in Kirkcaldy, and the archive contains material from 1665 to c.1700, with correspondence of particular interest relating to the purchase of timber from Norway and its subsequent distribution to buyers in Fife. There is also information about the supply of timber and other materials for building Alexander Watson's new house, following his purchase of the Glentarkie estate near Strathmiglo in the 1670s.

A timber cargo unloaded at Kirkcaldy in July 1674 contained 'dealls Treises & wyd Timber'.⁵³ The cargo contained both nine and twelve ell trees (baulks), pine and oak deals. There were approximately 80 entries listing the individuals who purchased and had timber delivered. The smallest quantity was one deal purchased 'To on And'son ye Cowbell man £00 07 06', and the largest was 360 deals sold to Bailie Adam⁵⁴ at £38 the hundred. Other buyers included wrights in Strathmiglo and Newburgh who purchased deals, and both deals and baulks were sent to the Watson's own estate at Glentarkie. This cargo probably arrived from Norway, which, along with the Netherlands, was one of the countries most frequently mentioned in the Kirkcaldy Sea Box records, (also known as the Prime Gilt Box) in which insurance premiums

⁵⁰ Elgvin, *En By i Kamp, Stavanger bys historie 1536-1814* [A City in Battle, Stavanger's History], p.185.

⁵¹ Lillehammer, 'Scottish-Norwegian Timber Trade in the Stavanger Area', in *Scotland and Europe 1200-1850*, Smout (ed), (Edinburgh, 1986) p.109. Lillehammer, 'Ætt og heim' in *Lokalhistorisk Årbok for Rogaland* 1987, p.54.

⁵² Dr. Paula Martin, transcriptions of the Watson Papers - ms38527, St. Andrews University Archives.

⁵³ Watson papers - ms38527/3a/20/4, St. Andrews University Archives.

⁵⁴ Possibly a relative of the architect William Adam, born at Abbotshall near Kirkcaldy in 1689.

were paid for the crew and cargo of merchant ships.⁵⁵ However, what remains unclear is where in Norway this timber cargo was purchased. Oak deals were still recorded as export wares at Nedstrand during the 1660s, so it could have come from somewhere in Ryfylke.⁵⁶ But the cargo also contained the preferred nine and twelve ell lengths, and since these had been in decline at Nedstrand from the 1630s it seems an unlikely source. The Watson papers also include detailed correspondence related to several voyages to Norway for timber from ‘drunton’⁵⁷ or Trondheim. This was an area further north still producing longer span timbers, although oak would not have been obtainable from here. A third, and most likely, possibility is one of the timber producing areas in the south of Norway that produced both pine and oak, such as Kristiansand. It was an area often visited by skippers for the Watsons.

Amongst the Watson papers, there is a note written in Norwegian-Danish addressed to Angus Linklater dated 16 July 1670 from Jacob Bardtelssen in Flekkefjord (a town in south-west Norway close to Kristiansand) undertaking to pay him the 20 riks dollars he owes him when he (Linklater) next returns to Flekkefjord.⁵⁸ Linklater was a skipper frequently chartered by the Watsons for voyages to Norway, and from the general tone of the note, he would appear to have been a regular visitor to Flekkefjord for timber. Since the Watson’s ships were still certainly engaged in the timber trade with Norway it seems probable that the 1674 cargo originated from there. Linklater appears on the lists of skippers’ names making payments to the Sea Box for voyages to Norway for 1671 and 1674. Between 1614 and 1699, the total number of entries for skippers who made voyages there amounted to 181.⁵⁹

Not all timber cargoes purchased from Norway returned directly to Scotland. According to the Watson papers, their ships sometimes sailed directly to London, Ireland or Rotterdam. The ships sailed to wherever the best price could be had, and following the Great Fire in 1666,

⁵⁵ J. T. Davidson, *The Prime Guilt Box of Kirkcaldy*, (Kirkcaldy, 1946).

⁵⁶ Nedstrand toll lists, ‘8 tylter Egebord – 6 alen lang...’ 8 dozen oak boards – 6 ells long. Extract from 1668, p.8.

⁵⁷ Watson papers ms38527/1/1/1: letter from James Carstairs to Alexander Watson, May 16 1668.

⁵⁸ Watson Papers ms38527/3b/6/7: translation of note from Jacob Bardtelssen to Angus Linklater, July 16 1670. Many thanks to Arnvid Lillehammer who helped to decipher both the writing and language of this document.

⁵⁹ My thanks to Sue Mowat, Kirkcaldy Sea Box transcription from original manuscript 1613-1699, unpublished.

the best price was often obtained in London.⁶⁰ It was also around this time that Norwegian timber exporters in Drammen and Kristiania began to take a more active role in selling their timber products abroad, and began to use specialised timber ships similar to the Dutch design to carry timber to England. Norwegian skippers then acted as selling agents in English ports and after 1666 in London it was Norwegian agents who controlled most of the timber trade there.⁶¹

Building case studies: Kirkcaldy, Dundee, Methven

Since Norwegian timber was one of the main imports to several east coast towns during the seventeenth century, it is likely that surviving buildings in eastern Scotland dating from the late sixteenth or seventeenth centuries would contain some evidence of Norwegian timber. To test this hypothesis, the following three building case studies dating from this period were examined to determine whether any pre-shaped or standardised timber components from Norway could be identified in their roof structures. Sailors' Walk in Kirkcaldy, Gardyne's Land in Dundee and Methven Castle in Perthshire are all candidate buildings, they all appear to have Norwegian timbers used in their construction.

Sailor's Walk, Kirkcaldy

Sailor's Walk (443-449 High Street) in Kirkcaldy is believed to date from or was substantially enlarged in the seventeenth century (Figure 25). It was the former Customs House of the burgh.⁶² The historic building survey of Sailor's Walk undertaken for the owners the National Trust for Scotland in June 2006 by Addyman Archaeology⁶³ included an investigation of original timbers in the attic areas. It concluded that they might be of Baltic origin dating from the late sixteenth century to mid seventeenth century. However, Kirkcaldy's trading links make

⁶⁰ Watson Papers ms38527/1/1/1; 1/2/1; 1/2/7 and 1/3/5 St. Andrews University Archives.

⁶¹ Jaap R. Bruijn, 'The Timber Trade: the case of Dutch-Norwegian Relations in the seventeenth century', in A. Bang-Andersen (ed), *The North Sea: A Highway of Economic and Cultural Exchange* (Stavanger, 1985) pp.123-135.

⁶² G.M.Lendrum, *Kirkcaldy's Oldest House: a plea for its preservation*, (Kirkcaldy, 1935). The earliest date associated with the building is 1459, and a coat of arms of Charles II dated 1663 or 1682 can also be found in the building.

⁶³ Addyman Archaeology, Sailor's Walk, 443-449 High Street, Kirkcaldy, Fife: Analytical assessment and historic building survey for the National Trust for Scotland, (interim draft: 12 June 2006).

it more likely that the roof timbers were of Norwegian rather than a Baltic provenance. In the absence of any documentary evidence, only dendro-analysis could confirm this.



Figure 25: Sailor's Walk in Kirkcaldy High Street. Built in the sixteenth or seventeenth century, it probably contains Norwegian roof timbers. Photograph: author 2008.

Nonetheless, a closer look at the length of the rafter couples and joists in the central roof structure revealed some interesting figures. On average, rafter couples in the central attic range equalled approximately 5 metres (eight Norwegian ells), and common joists resting on the wall head were 5.9 metres (just over nine Norwegian ells). Flooring joists in the east range were on average 3.5metres (<six Norwegian ells) (Figure 26 and 27).

The roof timbers in the central range showed no evidence of sawmilling and are “relatively neatly adzed to the square, though many retain waney-edged corners”.⁶⁴ The thirteen rafter couples of the central range are all marked with Roman numerals on the upper face of each couple collar. They follow in sequence as do the rafter couples in the north east jamb and the west range. In total there are 53 rafter couples, all of which would originally have had collar beams. Some are now missing, but originally there would have been at least 53 and some also

⁶⁴ Addyman Archaeology, Sailor's Walk, 443-449 High Street, Kirkcaldy, Fife, *Building Survey*, p3 v. A.

had secondary collars. In addition there were 40 common joists. In total this amounts to approximately 200 principal structural components. This calculation does not include planking for sarking, or additional timber required for ashlar pieces (106), but it does give a crude indication of the volume of principal timbers required for a roof structure similar to Sailors' Walk. A comparison with the cargoes carried by Andrew Westerton in 1617 or Walter Angus from Ryfylke indicates that a ship of between fifteen and 20 lasts (40 tons) was capable of carrying the required structural timbers for such a roof structure. This implies that for similar buildings found in the burghs a single cargo from Norway would have probably provided the principal timbers required for an individual roof.

Lillehammer calculated that approximately of 28,000 beams/baulks exported from Ryfylke, 91% were on Scottish vessels for the year 1641 to 1642.⁶⁵ This figure was not broken down into different sizes, but if we assume that the most commonly sought after dimension for building was nine ells, and that Sailors' Walk required approximately 200 baulks in total, then Ryfylke's output alone would have provided enough principal beams for 140 similar roof structures.

⁶⁵ Lillehammer, "Timber Trade...", p18.

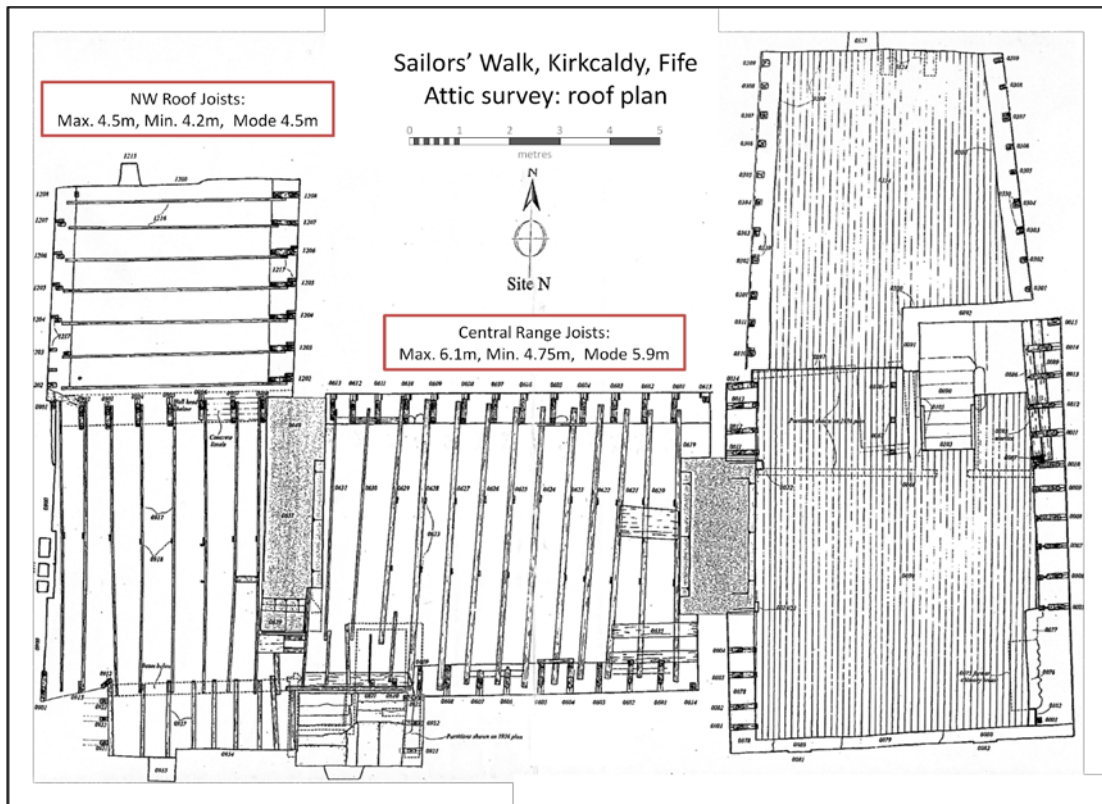


Figure 26: Drawing of roof structure at Sailor's Walk, Kirkcaldy, showing dimensions of attic joists. Adapted from Addyman Archaeology Interim Report June 2006.

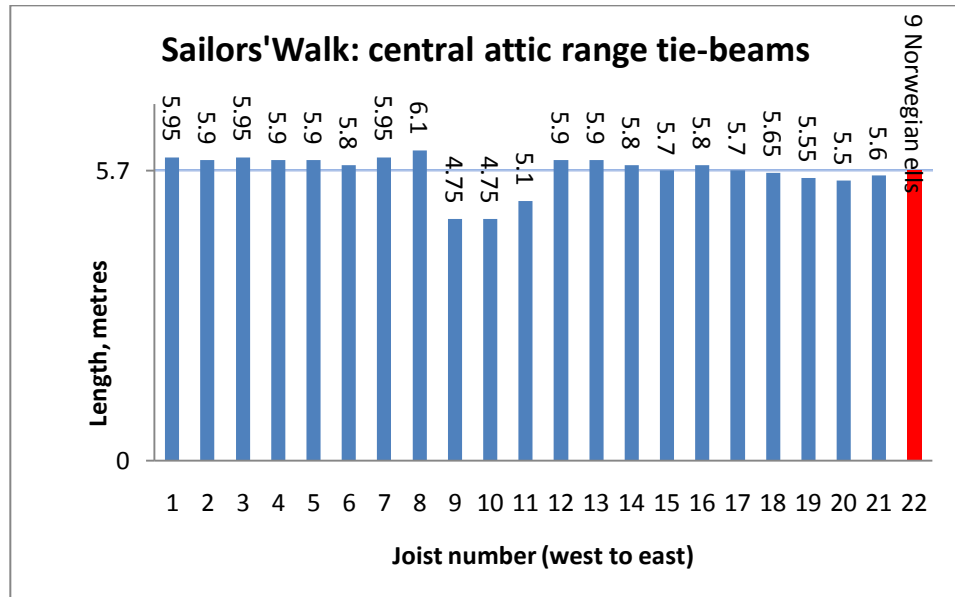


Figure 27: Graph showing that the majority of joists in the central attic range at Sailors' Walk are close to nine Norwegian ells in length.

Gardyne's Land, Dundee

An example of a building similar to Sailors' Walk is the recently restored complex of buildings known as Gardyne's Land in Dundee, which date from the late sixteenth and seventeenth centuries (Figure 28). A dendrochronological analysis of the structural timbers was undertaken in 2001, which included both oak timbers used as lintels and pine beams in two attics known as Buildings A and B. The results dated some of the oak timbers to between 1376-1595 and suggested a Scandinavian source. The analysis of pine timbers was less successful and no date or provenance could be arrived at based on the chronologies available at the time of testing, although this may change with future research.⁶⁶



Figure 28: Gardyne's Land, Dundee built in the sixteenth and seventeenth centuries using imported timbers from Norway. The buildings are now restored and used as a backpacker's hostel. Photograph : author 2009.

⁶⁶ A.Crone, Gardyne's Land, Dundee: dendrochronological analysis of the structural timbers, (AOC Archaeology, 2002).

Since the DSL have already shown that the majority of timber delivered to the town originated from Norway in this period, it is reasonable to assume that the timbers at Gardyne's Land probably came from the same source. An examination of the main roof at the south of the property known as Building B and constructed from pine beams revealed that the timber tie-beams spanning the full width of the building are approximately 7.5 metres or just less than twelve Norwegian ells or eight Scots ells. In total there are 22 roof trusses, with rafters of approximately 6.2 metres in length, *i.e.* approximately ten Norwegian ells or seven Scots ells. The collar-beams are approximately three metres, *i.e.* approximately five Norwegian ells, or less than four Scots ells. All the component parts of the trusses were marked with Roman numerals, which generally corresponded with one another; although the numbering of the trusses is not always in sequence (Figure 29). The principal trusses located on either side of the chimney gable are approximately 20cm in width and these beams had been squared off roughly using an axe or adze. The remaining rafters have a width of approximately twelve cm, and these sizes may give an indication of the difference between what were considered as either single or double baulks. However, the timbers here do not show any obvious evidence of sawmilling marks, and were probably produced by logs being cut and then squared off with an adze *i.e. cuttet tymer*.

The dimensions of the tie-beams certainly correlate with the Norwegian baulks that were being produced and exported from Ryfylke to Dundee in the early seventeenth century. From 1615 to 1629, the imports of twelve ell baulks approximately doubled from 1,500 to 3,500, and nine ell baulk imports increased similarly, from 3,500 to 7,500 (Figure 24). This may be an indication that the preferred components required for roof structures were twelve ells for tie-beams/joists and nine ells for rafter couples. Ten ell baulks were only recorded in the DSL during the 1630s, which coincided with the decline in both twelve and nine ell baulks. Perhaps it

was during the later 1630s that the south roof of Gardyne's Land (Building B) was constructed.⁶⁷



Figure 29: The south roof of Building B at Gardyne's Land, Dundee showing Roman numerals out of sequence: XI, XII, XIII followed by XVIII. Photograph: author 2009.

Methven Castle, Perthshire

Patrick Smyth, the owner and builder of Methven Castle in Perthshire, was an example of a successful seventeenth century Scottish merchant and businessman (Figure 30). He grew up in the Orkney Islands, grandson to the Bishop of Orkney. He subsequently inherited his family's substantial business interests both there and further afield, and served his merchant's apprenticeship at Danzig.⁶⁸ As a merchant Smyth's knowledge of trade, together with his Orcadian background, meant that he had excellent contact with timber merchants and suppliers in Norway (whether with fellow Orcadians, Scots or Norwegians). As an Orcadian merchant, he was likely to have had strong business links with the timber trade around Bergen and Sunnhordland since that was geographically closer, and traditionally where much of the trade with the Northern Isles was carried out.

⁶⁷ A separate roof in another area of this complex of buildings was known to have had a painted ceiling (now missing) dated to c.1654.

⁶⁸ Wemyss, 'Aspiration and Ambition,' Part Two p.112.



Figure 30: The south elevation of Methven Castle in Perthshire, with roof timbers ordered directly from Norway in 1681. Photograph: author 2008.

Recent building research at Methven Castle in Perthshire, built between 1678 and 1681, has presented interesting information about the acquisition of timbers from Norway for building works there.⁶⁹ Methven was fully restored during the 1980s by the current owners, and the original seventeenth century roof on the southern elevation of the building at Methven is still intact, although the timbers on the south pitch of that roof were replaced.⁷⁰ Importantly, the original roof timbers at Methven can be linked directly to correspondence describing structural components purchased directly from Norway. There is also a strong probability that pre-shaped timbers were purchased at their source since the required dimensions were specified in the order,⁷¹

...David has given bried and lenth to a merchant that is gone
to Norway to be roofing for my loves bonny strong house...,
they are now working upon the south wall and middle wall to
make them gest hight....⁷²

⁶⁹ Charles Wemyss, 'Some Aspects of Scottish country house construction in the post-restoration period: Patrick Smyth and the building of Methven Castle 1678-1681', M.Phil. diss., University of Dundee, 2002.

⁷⁰ David Murdoch, 'Methven Castle', B.Arch diss, University of Dundee (Duncan of Jordanstone), 1985.

⁷¹ Wemyss, "Some Aspects of Scottish country house construction ..." p37 and C. Wemyss, *Architectural History Journal of the Society of Architectural Historians of Great Britain*, Vol. 46, (SAHGB Publications Ltd, 2003) pp.112-113.

⁷² Letter from Anne Keith to her husband Patrick Smythe 1681, Perth Museum and Gallery Archive 873 (BOX 449).

The remaining original timbers on the north pitch measure 5m x 13cm x 15cm, the upper collar beams measure 2.2m x 13 cm x 13 cm and the lower collar beams are 5.1 metres in length. The replacement rafters on the south pitch measure 5.6 metres (Figure 31). The original roof for this part of the building would have required 35 joists (now removed), 70 rafter couples, 35 upper collar beams, and 35 lower collar beams. Since the merchant buying the timber in Norway had only the details of the length and breadth of the south side of the house, it suggests that the nearest standardised dimensions available would have been selected.⁷³

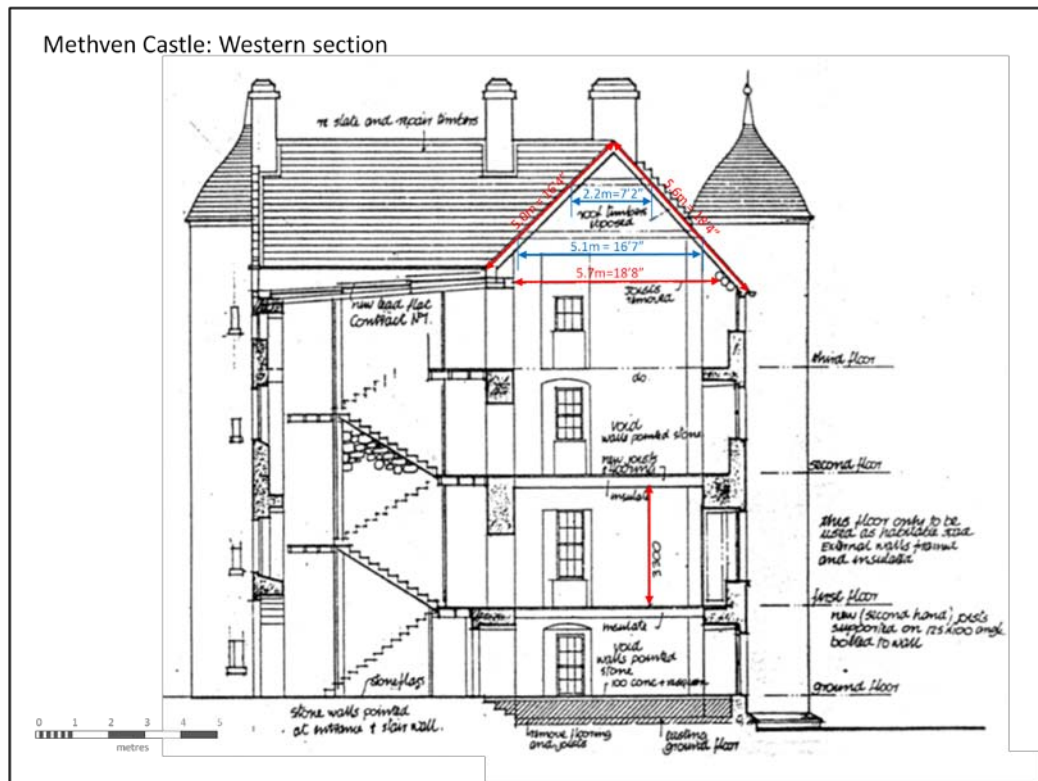


Figure 31: Methven Castle, Perthshire showing the dimensions of the roof trusses. Adapted from drawings by K.L.S. Murdoch, A.R.I.B.A., July 1984.

Once on site they could then be trimmed to fit the dimensions at Methven more precisely. Today there are 37 trusses (two are new) in total and the original beams are numbered from west to east with Roman numerals from II to XXXV. Both the upper and lower collar-beams are numbered in series as well, and although some appear to have been placed upside down, they are still in sequence (Figure 32) and similar to a numbering system used by

⁷³ The internal measurements were 42'7" or 13 metres and 18' or 5.5 metres. See Murdoch, 'Methven Castle'.

carpenters in the Netherlands.⁷⁴ The beams have been squared off with an axe or adze and there was no visible evidence of sawmilling. Other timbers at Methven in the same part of the building show clear signs of having been sawn and are marked too, though not with Roman numerals; these marks may signify an individual carpenter's mark or possibly sawmill ownership in Norway. Directly after felling a tree the heel of the axe was used to mark the log with the identity symbol of the forest owner. This practice continues today and is believed to originate from the time of the first sawmills in Norway.⁷⁵



Figure 32: Methven Castle collar-beams showing what appears to be an inverted sequence of Roman numerals; however this practice is very similar to the system of numbering used by carpenters in the Netherlands. Photograph: author 2008.

To strengthen and prepare the roof for slating, sarking boards or deals would also have been required before the slates were fixed using 'trenails' (Figure 33). The deals for Methven were to be collected from Dundee by the same ship coming from Norway with roofing timbers. In Anne Keith's letter to her husband, Dundee's deals were considered to be, '... as good as

⁷⁴ Herman Janse, *Houten Kappen in Nederland 1000-1940* [Wooden Roofs in the Netherlands 1000-1940], (Zeist, 1989).

⁷⁵ Pers.comm. Jesper Heiberg, Norwegian forestry owner.

those that come from Leith but much cheaper...'⁷⁶ implying either that prices for storing timber at Dundee's woodyards were less than those at Leith, or perhaps a further indication that Dundee already had its own sawmill producing its own deals or planks, similar to the Dutch practice.



Figure 33: Trenail (approximately 10 cm) used for fixing roof slates at Methven Castle.
Photograph: author 2008.

Pre-fabrication of timbers at source

Thorsten Hanke's M. Phil thesis⁷⁷ demonstrated that in the first half of the seventeenth century, Scotland's wrights required large amounts of processed timbers for roof construction, and that these were likely to have been pre-fabricated or shaped at their source. His study focused on roofs in south east Scotland; the results identified a uniformity in their construction, and that the quantities and sizes of timber involved could not have been processed efficiently enough by carpenters/sawyers preparing sawn timbers by hand.

At the house called Black Castle, South Queensferry (1626) Hanke calculated that its double-pitched, single-rafter roof required two layers of sarking *i.e.* planking for two slopes with an area of 4.9m x15.5m each. This would have required approximately 960 boards of 2m x 0.16m, and would have taken two sawyers using a hand frame/pit saw 48 days to prepare. This

⁷⁶ Letter from Anne Keith to her husband Patrick Smythe 1681, Perth Museum and Gallery Archive 873 (BOX 449).

⁷⁷ Thorsten Hanke, 'The Development of Roof carpentry in south east Scotland until 1647,' M.Phil. diss., University of Edinburgh, 2005.

estimate takes no account of additional structural timber components such as rafters, collar-beams, partitions, doors, flooring *etc.* which would also have been required and added to the time taken.⁷⁸ Hanke concluded that it was quite likely that wrights in south east Scotland relied on a selection of imported timbers and primarily used pre-fabricated elements. His study found single-rafter roofs that contained softwood timbers of almost uniform dimensions, usually inscribed with Roman numerals, plus wooden pegs and sarking boards to provide lengthwise stiffening. He also identified similar examples of the same roof structure, albeit sometimes of larger dimensions at, amongst others, Halkerston Lodge (1638-1642), Heriot's Hospital, Pinkie House and Culross Palace.⁷⁹ Hanke is correct in his suggestion that both the Baltic and Norway were possible sources for such timber imports to Scotland in the early seventeenth century, and it was Norway that predominated as the main source for mass produced, pre-fabricated softwood timbers, particularly baulks or beams and deals that would have been used both for roof construction and for joists and flooring.⁸⁰

The roof timbers in the Great Hall at Edinburgh Castle are also marked with Roman numerals, both for the individual elements of the frames (as at Gardyne's Land) and for the construction sequence as at Methven.⁸¹ The numbering of the frames, however, was not in numerical sequence, but in groups which show how this roof structure would have been assembled in different stages. Similar carpenters' marks to those at Sailor's Walk, Gardyne's Land, Methven and Edinburgh Castle have also been found at many other Scottish buildings, usually in the form of Roman numerals.⁸² Another example is Craigston Castle, where the roof timbers in the principal attic are numbered with Roman numerals I-XXIII and could be the same timbers sent for from Norway by Sir Thomas Urquhart in 1631. As shown with Edinburgh

⁷⁸ Ibid., p.109.

⁷⁹ Ibid., p.135-136.

⁸⁰ There is evidence where a kirk session decided to make a new church pew and that it should be made the same length as a Norwegian deal. The same logic could have been applied by wrights in the building trade, and roof spans were based on the available pre-fabricated/sized timbers. Pers.comm. Sue Mowat.

⁸¹ Crone and Gallagher, 'The Late-medieval Roof over the Great Hall in Edinburgh Castle', in *Medieval Archaeology*, Vol .52, (2008) pp.249-255.

⁸² Geoffrey D. Hay, 'Some Aspects of Timber Construction in Scotland', in *Building Construction in Scotland: Some Historical & Regional Aspects*, Scottish Vernacular Buildings Working Group (Edinburgh and Dundee, 1976) p.31.

Castle, it is also possible to use these marks to understand the order in which the different elements of a roof have been erected. Thus, although adjacent marks may appear out of sequence it may indicate the correct sequence for assembling the different components of the roof structure, such as the principal rafters before secondary, and was not necessarily the result of a misunderstanding or improvisation by the carpenters or wrights on site.⁸³

Research carried out in the Netherlands into timber markings used for framing roofs has also demonstrated that carpenters' marks were used as a matter of course for roof structures there. Carpenters in the Netherlands generally travelled less than stonemasons and it would have been normal practice for roof structures to have been pre-fabricated at some distance from the building site at a framing workshop. The assembly marks were a system of marks scored and later chiselled (c.1500) into the timbers to depict the sequence of construction and also whether they were the left or right components of a roof frame.⁸⁴ The assembly marks can sometimes be used to indicate the construction date and also the area of the Netherlands where the different components were originally produced.⁸⁵

By analogy, if the timbers at Sailor's Walk, Gardyne's Land and Methven were prefabricated or pre-shaped in Norway then the carpenters' marks were made before these cargoes left for Scotland. The documentary evidence for Methven Castle certainly implies that this was the case and it can be interpreted in two ways. At one level, it could have meant that specific quantities of standardised dimensions were ordered through a merchant or skipper that were then collected from Norway and afterwards set together by carpenters on site in Scotland. At a more sophisticated level, an order may have required the precise shaping of timbers and pre-fabrication of the individual component parts of the trusses with the necessary positioning marks for re-assembly. The required carpentry skills certainly existed in Norway, where from at least the 1570s onwards, there was a tradition of exporting small pre-fabricated rowing boats

⁸³ Janse, Houten in Nederland, p.389.

⁸⁴ Ibid., p.389.

⁸⁵ Ibid., p.389.

from the fjords around Bergen in western Norway to Scotland.⁸⁶ More importantly, there is evidence that Shetlanders from Unst purchased ‘timber for houses ready framed’ from Bergen in the 1630s,⁸⁷ and complete buildings were also exported to the Faroe Islands, and Iceland.⁸⁸ Ready framed timbers for houses, however, may have been a less acceptable commodity for the craftsmen on the Scottish mainland, since such imports would have reduced demand for the services of carpenters, sawyers and wrights. The examples examined here, however, do not conclusively demonstrate that roof structures were generally pre-fabricated to order in Norway before being shipped to Scotland. It appears more likely that quantities of standardised dimensions were ordered, which were then trimmed as necessary to fit individual buildings.

Conclusion and Analysis

The evidence shows that Scotland has a long history of importing timber for building construction from both the Baltic Sea region and Norway. The Baltic appears to have dominated the trade from the fourteenth century onwards. However, Norway was certainly exporting building timber to Scotland by the beginning of the sixteenth century and possibly earlier. It became the most important supplier of pine timber for the majority of the seventeenth century, and continued into the early eighteenth century, when Baltic timber once again became more dominant.

For the fifteenth century, the Danish Sound Toll Registers show that Scotland’s east coast ports were mainly involved with importing timber from the region, and Scottish ships visited primarily two ports, - Danzig and Königsberg, - to buy klapholt, wainscot, deals and planking. By the early seventeenth century this trade had started to decline, with the exception of deal exports. The volumes of deals were relatively small when compared with the quantities being imported on Scottish vessels from Norway to Dundee for the same period. At Dundee,

⁸⁶ Thowsen, ‘The Norwegian Export of Boats to Shetland, and its influence upon Shetland boat building and usage,’ *Sjøfarts Historisk Årbok* [Maritime History Yearbook] (Bergen, 1968) p.150 and A. Espeland, *Skottene i Hordaland og Rogaland* [The Scots in Hordaland and Rogaland], (*Norheimsund*, 1921) p.23.

⁸⁷ Thowsen, ‘The Norwegian Export of Boats to Shetland...’p.150.

⁸⁸ B. Stoklund, *Det Færøske hus i kultur-historisk belysning*, (Copenhagen, 1996).

imported deals from both the Baltic and Norway peaked in 1645 when 93% of these imports were sourced from Norwegian forests. Very few Baltic vessels were recorded in the Dundee Shipping Lists with timber cargoes, whilst all those sailing from Norway were loaded exclusively with timber. A similar trend was also documented at Leith for the period 1638-1639, and continued into the late seventeenth century. The evidence narrows the dating of change in preference from Baltic to Norwegian timber to c.1630s.

Norway's importance as Scotland's preferred source for timber developed for a number of reasons. One was the decline of the Hanseatic League's control over Norwegian trade, which had restricted trading opportunities. Other key factors were costs and convenience. Every ship that sailed through the Øresund paid an additional duty on the goods they carried, and during certain phases of the Thirty Years War from 1618 to 1648, the trade routes to Baltic ports were seriously disrupted, which increased the risks of sailing there. Norway was a cheaper, more reliable alternative. It was closer than the Baltic ports which meant that several voyages could be undertaken annually to meet the increasing demands for building timber in Scotland. In addition, there were already Scots living in Norway operating as both merchants and sawmill owners. The critical factor, however, in Norway's success as an exporter of timber was the introduction of the water-driven sawmills in the sixteenth century, which had a profound effect on the production and export of timber. The production of large volumes of standardised timber cuts, in particular planks and beams, quickly became a central element of trade not only for Norway's coastal towns, but also for the more modest hamlets and forest-farms of the western fjords.

In contrast, very few sawmills have been recorded in Scotland, with only a small number mentioned from the 1630s onwards in remote areas. The apparent lack of enthusiasm to adopt sawmills in Scotland, whether wind or water-driven, suggests that suitable timber for processing in this way was either very limited or inaccessible. However in the Netherlands, where there was no suitable native timber for processing, wind-driven sawmills were swiftly taken on. There large quantities of unprocessed timbers were imported from Norway, which met

with huge opposition from the local hand sawyers' guilds, who recognised a direct threat to their profession. They not only vetoed the introduction of mechanised sawmills to Amsterdam, but also prohibited sawn timbers from entering the town. It is worth speculating that a similar reaction in Scotland's ports was a reason for the reluctance to build a sawmill at Leith until 1695.

From a compilation of Norwegian and Scottish sources, it has been possible to re-construct the details of skippers and their voyages, the sawmills and farms where timber was collected from in Norway, the types of timber cuts favoured by Scottish markets and the ports where the cargoes were delivered. The skippers built up an import trade based on personal networks, a good knowledge of Norwegian waters and timber resources. On arrival, timber was either delivered directly to building works that it had been ordered for, or it was stockpiled by timber merchants at timber yards until purchased for use by wrights. But what consequences did the increased accessibility and availability of Norwegian timber have for the building trades and architecture in Scotland?

Norway clearly became the most important supplier of timber for building construction in Scotland during the seventeenth century. Both oak and pine timbers were exported, but it was the mass production of Norwegian pine deals and beams that were central to the needs of Scotland's building trades. This timber would have been used by wrights for fitting out interiors with flooring, sarking and laths for plaster ceilings; other applications included simple panelling, window frames and furniture. Although deals were imported in their tens of thousands, roof timbers were also one of the most significant products exported from Norway to Scotland. Many of the terms used for describing timber cuts were related to roof structures, and baulks or beams would have been used for the structural components of roofs such as rafters, tie-beams, collar beams, and ashlar posts.

Significantly, Norwegian timber supplied Scottish builders with longer spans for structural work. As documented at Gardyne's Land in Dundee, this allowed for a wider building span of approximately 24 feet, four feet wider than the limitations previously set by

stone vaulted buildings. This change to wider spans continued through the seventeenth century where new builds such as Panmure House, built in the 1660s, required structural timbers of 22 feet, 26 feet and 27 feet for the main roof timbers. At Castle Lyon, walls were peeled back to increase room sizes by up to five feet. At Brechin in the 1680s and 1690s, a stone vault was replaced with wooden joisting to carry the floor above, and walls were thinned by three feet creating wider rooms with spans exceeding 20 feet.

The Dundee Shipping Lists recorded nine (18 ½ feet) and twelve ells (approximately 24 ½ feet) as the most common dimensions for imported baulks. These continued to be important despite the decline in the production of this size of timber from Nedstrand in the 1630s; and Dundee continued to import the same dimensions from other areas of Norway at least into the 1650s (after which descriptions of cargoes in the DSL rarely include dimensions). Later evidence from Kirkcaldy shows they continued to arrive there into the 1670s from sources in both northern and southern Norway. This strongly suggests that nine and twelve ell timbers were required for specific purposes in building construction. Pine beams of very similar dimensions have been subsequently found in surviving roof structures from the period at Sailors' Walk in Kirkcaldy and Gardyne's Land in Dundee, with the roof structure at Methven Castle in Perthshire having fewer measurements that could be directly matched to pre-shaped ell lengths. As Methven was built in the later seventeenth century, another unit of measurement such as feet may have been used for the timbers. Importantly, the timber for Methven's roof structure was commissioned directly from Norway, and a merchant was sent out with specific measurements, implying that a bespoke frame was ordered and initially assembled in Norway. The structural components were then numbered with Roman numerals as was common practice in many areas of Europe, the frame dismantled and shipped to Dundee. This may be why the dimensions at Methven are dissimilar to the standard sizes found at Sailors' Walk and Gardyne's Land. It also suggests that this may have been a quicker and more economic way to build. Patrick Smythe, Methven's owner, a successful merchant and businessman would have

had the right contacts and knowledge of timber suppliers and craftsmen in Norway to undertake such a commission successfully.

It is arguable therefore that the increasing use of timber in roof structures, flooring joists and interiors would mean that wrights would take on a more significant role in the building industry. One successful individual who benefited from the dual role of being both timber merchant and master wright was James Baine, burgess of Edinburgh. Baine was working from the 1650s onwards, and during his career attained the highest accolade for a member of his craft when he was appointed to the position of His Majesty's Master Wright. The working practices of wrights, their organisation and importance within the building industry will now be examined through Baine's career.

PART TWO

JAMES BAINE: THE KING'S MASTER WRIGHT

ca. 1630-1704

INTRODUCTION

Research on the organisation of the building trades in the seventeenth century has generally tended to focus on masons who have been traditionally portrayed as the most influential of the craftsmen in Scotland.¹ However, the increasing use of timber in building works brought about by a new source of supply from Norway would have had a commensurate increase in demand for wright work, allowing this group of craftsmen to become more influential amongst the building trades. Architectural changes brought about by the introduction of wider spans would also have presented wrights with new challenges to expand their technical knowledge and skills. The combination of the availability of pre-shaped and sized timbers from Norway would also have simplified the work of wrights, making their workmanship more cost-effective for their clients.

The following examination of the organisation and working practices of wrights will attempt to advance the understanding of their skills and contribution to seventeenth century building works through the medium of the career of James Baine, wright and burgess of Edinburgh. It will also determine whether the increased opportunities for using pre-cut timber corresponded to a change in the status and authority of master wrights amongst their fellow craftsmen in the building trades. Baine was one of the foremost wrights of the period, and there are several sources relating to his working life which have not been fully explored until now. He was employed at a number of Scotland's great houses that are also well documented, and which offer useful case studies of building works in seventeenth century Scotland.

Francis Bamford provided a very brief résumé of Baine's career in *The Dictionary of Edinburgh Wrights and Furniture Makers, 1660-1840*² and mentioned his work for the earl of Tweeddale, but gave no further indication of the extent or nature of Baine's work. Other

¹ D. Stevenson, *The First Freemasons: Scotland's Early Lodges and their Members*, (Aberdeen, 1988), p.12 and *The Origins of Freemasonry: Scotland's Century 1590-1710* (Cambridge, 1988).

² Francis Bamford, *The Dictionary of Edinburgh Wrights and Furniture makers, 1660-1840* (London, 1983) p.41.

documentary sources, however, relating to Baine from 1651 to 1704, allow us to follow the development of his working life from apprentice to His Majesty's Master Wright and main contractor. During his career, Baine was occupied with building works for the Scottish nobility; in total twenty buildings have been found to be associated with him, including some of the greatest houses in the land - Neidpath Castle, Pinkie, Yester³, Glamis, Castle Lyon⁴, Panmure, Brechin Castle⁵, Dunkeld⁶, Thirlestane, Stirling Castle, Holyrood Palace, Edinburgh Castle and the Bass Rock.⁷ At the same time, he was a successful timber merchant, and his dual role as wright and merchant will be examined to assess how that may have accelerated his early success and royal appointment. Despite some major financial setbacks, Baine continued to be employed as a main contractor and it appears that in at least one case towards the end of his career, Baine may have taken on the additional role of 'architector'. This research, based on documentary evidence sourced from the Exchequer records, private archives and the Register of Deeds, includes contracts, discharged accounts and correspondence often concerning disputes over Baine's work and unpaid bills.

However, contractual disputes and disagreements over payments with his clients became increasingly common in the 1670s, and were probably related to Baine overstretching his resources. There were also instances of Baine being accused of carrying out sub-standard work, for example at Dunkeld and Brechin.⁸ By the 1690s, Baine was declared bankrupt and imprisoned in the tolbooth at Edinburgh from where he attempted to recoup vast sums of money still owed to him both by the Crown and by his former clients. By following Baine's lengthy career as it developed over three decades, we can chart the progress of a practising wright in a period when wright work became increasingly significant to the whole building process.

³ NAS GD28/2102

⁴ Strathmore Muniments, Glamis Castle.

⁵ NAS GD45 Dalhousie Muniments

⁶ C. Wemyss, "Some Aspects of Scottish country house construction in the post-restoration period. Patrick Smyth and the building of Methven Castle 1678-1681", M.Phil. diss., University of Dundee, 2002.

⁷ Mylne, *The Master Masons to the Crown of Scotland*, p.202.

⁸ Wemyss, 'Some Aspects of Scottish Country House Construction...' cites a dispute concerning timberwork at Dunkeld with Atholl was recorded in 1694 referred to in J. Murray, 7th Duke of Atholl. (ed.) *Chronicles of the Families of Atholl and Tullibardine* (Edinburgh, 1908), pp.338-339.

CHAPTER 4: THE INCORPORATION OF WRIGHTS AND MASONS OF MARY'S CHAPEL, EDINBURGH

Craftsmen operating in the seventeenth century burghs were usually obliged to belong to guilds or craft incorporations set up to protect the interests of their members and prevent outsiders from encroaching on work in their locality.⁹ This was true for most of the trades involved in building construction, such as quarriers, masons, barrowmen, wrights, carvers, plasterers, carpenters, sawyers, slaters, plumbers, glaziers, smiths, and painters. From brief descriptions concerning craftsmen who worked with timber in the *Accounts of the Masters of Work 1529-1615*, it is evident that a hierarchy amongst woodworkers existed, with sawyers regarded as a separate and less skilled profession than carpenters or wrights, concerned solely with sawing of boards, and laths or battens.¹⁰ Carpenters were generally considered to be concerned with constructing heavier and stronger work than a joiner, for example building ships and in England producing the timber framework for houses.¹¹ In Scotland they sometimes had an additional association with the role of 'gunner'. This was a position that would have made use of their knowledge of geometry for mounting guns for firing, and there are references to the repair of mountings by carpenters for cannons, for example at Crown properties. Their knowledge was also used for providing solutions to complex building operations, such as lifting heavy timber structures.¹² Joiners were concerned with 'lighter and more ornamental work than that of a *carpenter*, such as the construction of the furniture and fittings of a house'.¹³ By the seventeenth century, Scottish craftsmen working with wood in building construction were generally known as wrights, apparently combining the skills of a carpenter and joiner. They were trained as apprentices in the skills necessary for making roofing, flooring, doors, windows,

⁹ Gifford, *William Adam*, pp40-47.

¹⁰ Paton, (ed.) *Accounts of the Masters of Works Vol.1 1529-1615* (Edinburgh, 1957) p.258.

¹¹ *Oxford English Dictionary Online*, (Oxford University Press, Second Edition 1989). Accessed 8 February 2010.

¹² Pers. Comm. Michael Pearce, Historic Scotland.

¹³ *Oxford English Dictionary Online*, (Oxford University Press, Second Edition 1989). Accessed 8 February 2010.

and furniture as well as repairing barrows, carts and setting up scaffolding for other trades.¹⁴ In Edinburgh, prospective wrights had to first become indentured apprentices with the Incorporation of Masons and Wrights at Mary's Chapel, and that was where Baine received his training.

Originally dating from 1475, this incorporation was an example of an organisation where masons and wrights were mutually affiliated.¹⁵ In 1613, the Incorporation established St. Mary's Chapel on Niddry's Wynd as its meeting place, where it remained until the late eighteenth century.¹⁶ The Incorporation not only represented the masons and wrights of Edinburgh, it also represented most other craftsmen employed in the building trade such as glaziers, bowers (bow-makers), plumbers, painters, slaters, coopers, sieviewrights and upholsterers. However, only the masons and wrights had their own deacon, one elected annually for each trade. The other trades were all represented by a quartermaster elected from within their own craft. This hierarchy amongst the trades demonstrates that the masons and wrights were the two most influential trades within the organisation and considered as equal. A separate organisation administered the activities of wrights who operated in the adjacent burgh around the Abbey of Holyrood, the Incorporation of the Wrights of Canongate. In 1639 the Edinburgh incorporation was granted superiority over the Canongate, which continued until the two organisations merged in the nineteenth century.¹⁷

The earliest regulations for apprenticeships in Edinburgh were set down in 1475 for what was then known as the United Incorporation of Wrights and Masons, and stated that apprentices had to be younger than 21 at the time of registration with seven years the minimum term to be served as apprentice. Some indentures, however, continued for as long as ten years before an apprentice became a burges.¹⁸ Similar regulations were stipulated by the Wrights

¹⁴ Ibid., Paton, *Vol. I* p.39.

¹⁵ Stevenson, *The First Freemasons: Scotland's Early Lodges and their Members*, p.12

¹⁶ Pryke, 'The Eighteenth Century Furniture Trade in Edinburgh,' Ph.D. diss., University of St.Andrews, 1995, p.11.

¹⁷ Bamford, *The Dictionary of Edinburgh Wrights* p.3-4.

¹⁸ Pryke, 'Eighteenth Century Furniture Trade in Edinburgh,' p.12, 50-51.

Incorporation of Perth,¹⁹ while during the seventeenth century in Dundee wrights remained as apprentices for only six years.²⁰ By the nineteenth century, Mary's Chapel also recorded the term of apprenticeship as being reduced to six years.²¹

The surviving Minute Books of the Incorporation of Mary's Chapel covering the period from 1669 to 1695 give an indication of the composition of the membership (Figure 34)²² and the engraving by Robert Chalmers c.1721 clearly illustrates these ten trades (Figure 35). Mary's Chapel was clearly dominated by wrights, who on average made up approximately 50% of the total membership during the period examined. Second were the masons who represented approximately 14%. Together the coopers, glaziers, painters and slaters formed approximately 30% (6%-9% each) of the membership. The remaining trades; bowers, plumbers, sieviewrights and wright upholsterers each comprised 2% of the total. The total membership of Mary's Chapel gradually increased from 96 in 1669 to 158 in 1695.²³ The numbers of wrights almost doubled in this period, as did coopers and glaziers. The numbers of painters and wright upholsterers trebled (although in real terms this meant an increase from one to three for upholsterers), whilst the masons' numbers remained fairly static with between 15 and 21 members. The only trade which witnessed a reduction was the sieviewrights whose membership halved from four to two. The general trend of increasing numbers of skilled building craftsmen indicates a demand for their skills towards the end of the seventeenth century, one which may have in part been generated by the Crown building works at both Holyrood and Edinburgh Castle, and agrees with recent research showing that extensive country house building was being undertaken.²⁴

¹⁹ L.W.S. Petznick, 'The Wright Incorporation of Perth Minute Books 1700-1840,' Ph.D. diss., University of St.Andrews, 1999, p.40

²⁰ A. Smith, *The Three United Trades of Dundee: Masons, Wrights and Slaters*, Abertay Historical Society Publication No.26 (Dundee, 1987) p.19.

²¹ Pryke, 'Eighteenth Century Furniture Trade in Edinburgh,' p.50. Pryke believes that these laws remained fairly constant thus a change in the number of years required may have occurred earlier on in the history of Mary's Chapel.

²² Edinburgh City Archives: SL34/1/1-3. Data for 1673, 1677, 1678 and 1680 was missing, but general trends can be arrived at for the period 1669 to 1695.

²³ D. Stevenson, *The First Freemasons: Scotland's Early Lodges and their Members*, (Aberdeen, 1988), p.15.

²⁴ Charles Wemyss, 'Some Aspects of Scottish country house construction in the post-restoration period. Patrick Smyth and the building of Methven Castle 1678-1681', M.Phil. dissertation, University of Dundee, 2002. See Chapter 1: 'Was there a great rebuilding of Scottish country houses in the late 17th century?' pp. 4-8.

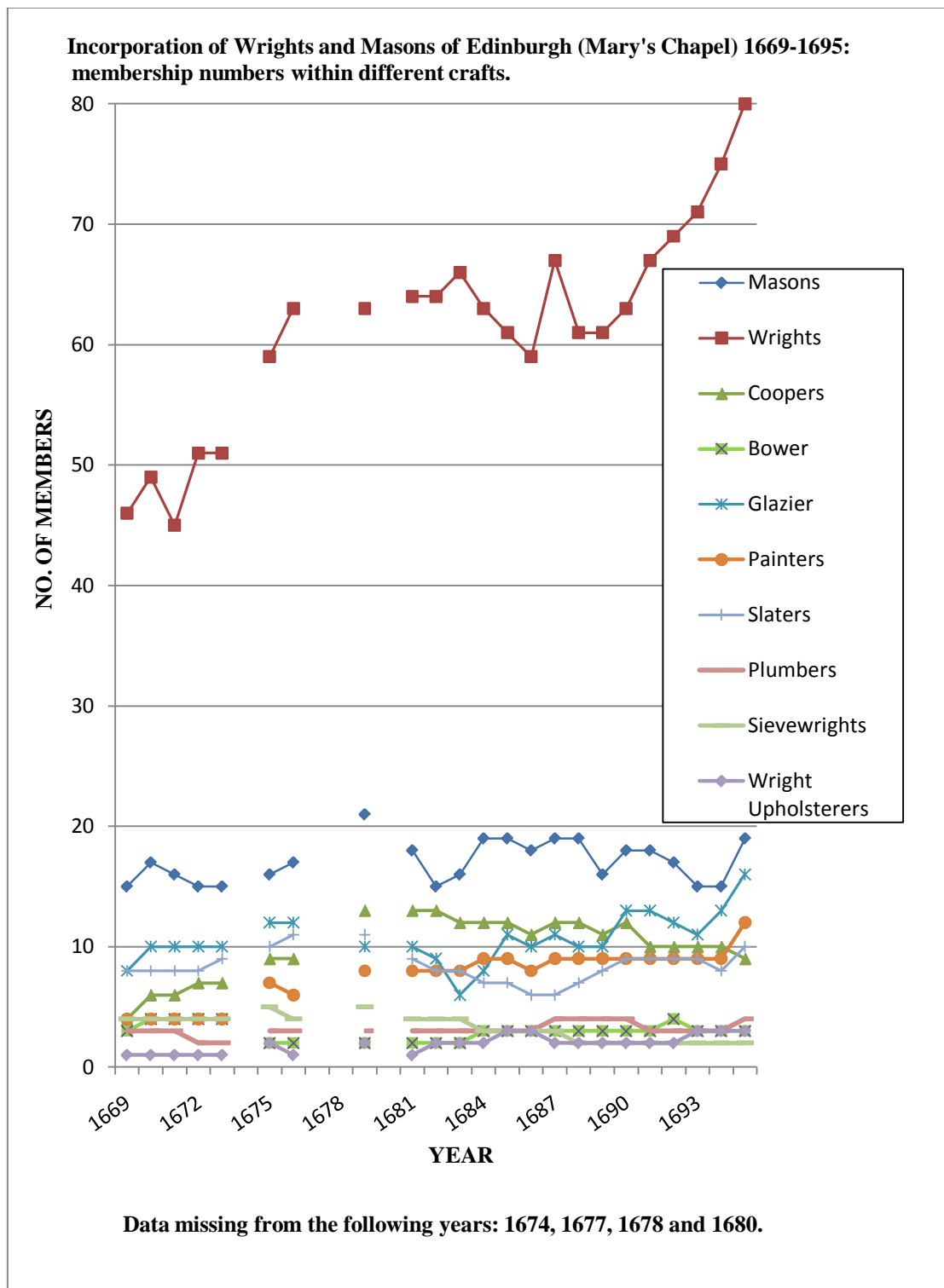


Figure 34: Membership of Mary's Chapel 1669-1695, showing the different trades admitted as brethren.

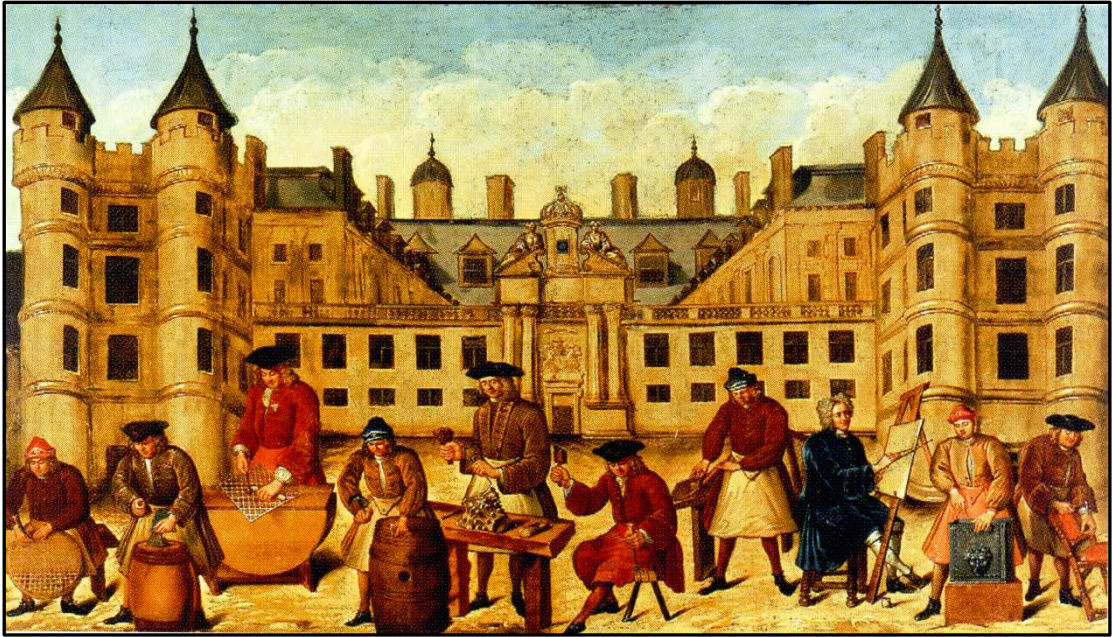


Figure 35: The ten trades of the Incorporation of Wrights and Masons, Mary's Chapel, Edinburgh in front of Holyrood Palace c.1721, an engraving by Robert Chalmers. From left to right this shows a sievwright, slater, glazier, cooper, mason, wright, bowyer, painter, plumber and upholsterer. © Incorporation of Wrights & Masons of Edinburgh, in the collection of the Edinburgh Trades Maiden Fund.

All prospective freemen at Perth and Edinburgh had to obtain a burgess ticket and make an “Essay” piece to the satisfaction of the masters, whose duty was to ensure only qualified individuals entered the Incorporation. In Edinburgh, the successful candidate would then have paid six shillings eight pence to the altar of St. John at St. Giles in order to become a freeman. The additional costs associated with becoming a burgess after having served an apprenticeship amounted to £130 in 1697, and was probably an initial entrance fee.²⁵ Apprentices who entered the Incorporation via the hereditary right of their fathers or fathers-in-law were exempt from producing an essay piece and paid a significantly reduced fee. The same regulation was implemented at the Perth Incorporation of Wrights, although an act from 1676 stated that only those who married freemen's daughters would be admitted to his father-in-law's science, “provided he be qualified thereto...”²⁶

A further expense for any apprentice would have been the tools of his trade, and for all craftsmen these would have been considered as their most valuable possessions. According to G. Hay, wrights' tools remained essentially the same from the fifteenth century onwards, and

²⁵ Pryke, ‘Eighteenth Century Furniture Trade in Edinburgh,’ p.12 and 52.

²⁶ Petznick, ‘The Wright Incorporation of Perth Minute Book,’ p. 47.

included an axe for felling, squaring and splitting timber, an adze used for smoothing the surface of timber, several types of saw, an auger for boring and a claw hammer.²⁷

The Minute books of Mary's Chapel recorded the essay pieces completed by apprentices from the different trades. There were a number of different standard pieces that could be requested for a wright to produce; a wainscot press, wainscot ambry, an oval table or a box bed.²⁸ The essay piece for one of James Baine's apprentices - John Purves - was recorded on the 14 April 1671 wherein he was described as being apprentice to 'James Baine His Majesty's Master Wright Burgess and Freeman of Edinburgh.' It was entered in the Minute Book that Purves was to execute his essay of

...one wainscot aumbry with six leaves of wainscot angled from point to point his assay masters George Sanderson and William Livingstone to be perfyted be him betwixt lammas (August) next...²⁹

At this time Purves also produced his burgess ticket and was subsequently admitted to the guild brethren of Mary's Chapel. On 3 June 1671, John Hamilton (clerk) recorded that after successfully executing his essay; John Purves took his oath of fidelity and paid his ordinary dues.

Apprentices such as Purves would have received an extensive practical education, where he would have been acquainted with the structure and use of the different architectural orders. David Jones' paper 'Box Beds in Eastern Scotland' found orders specified as being after Vignola, Scamozzi and increasingly Palladio in the early eighteenth century. The earliest example of an essay piece at Mary's Chapel using the classical orders was in 1683 when an apprentice was required to produce 'ane Closs bed...with ane dorick entablature....' The first mention of Palladio occurred in 1692, followed by references to Vignola and Scamozzi.³⁰ This training in classical design indicates that to become a burgess and member of Mary's Chapel was a considerable achievement giving the Incorporation's members a recognised and high

²⁷ Hay, 'Some Aspects of Timber Construction in Scotland', p.32. He also included a two-handed pit saw, but since sawyers were generally regarded as a separate trade by the seventeenth century this has been omitted from the above list.

²⁸ Pryke, 'Eighteenth Century Furniture Trade in Edinburgh,' p.53.

²⁹ Edinburgh City Archives: SL34/1/1, Minute Book 1669-1686, p.19.

³⁰ David Jones, 'Box Beds in Eastern Scotland', *Regional Furniture V* (1991), pp.79-85.

status position in society.³¹ Until recently this practice was considered to be unique to Edinburgh, however, the Lawson Collection in Dundee contains drawn evidence of similar workmanship found on a box bed probably from the same period (Figure 36), suggesting that such skills were more widely adopted amongst Scottish wrights than previously assumed.³²

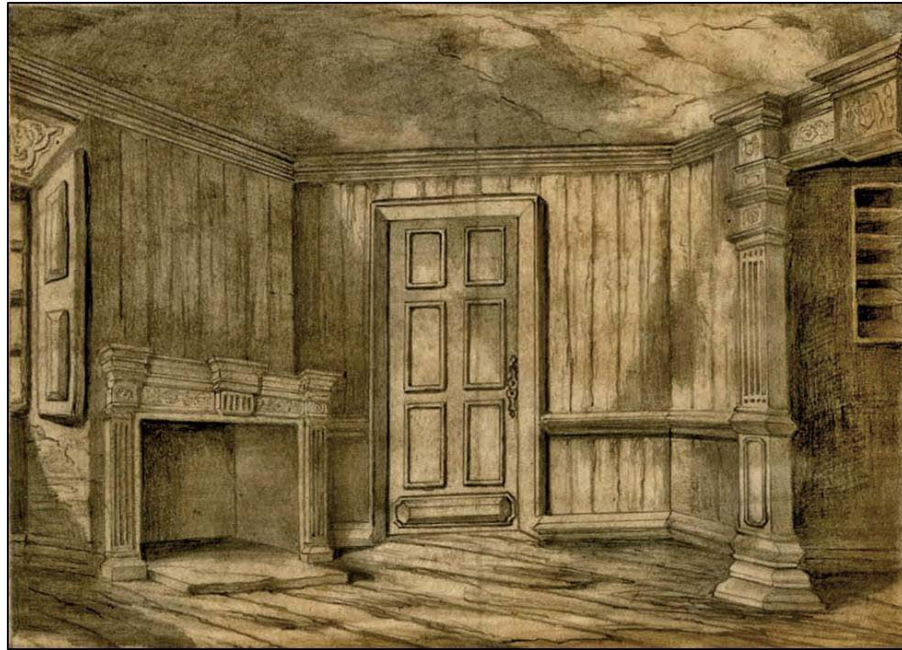


Figure 36: Our Lady Warkstairs, Dundee. Drawing by Charles S. Lawson of an interior showing a box-bed alcove © Dundee Central Library 2007.

A wright would also have been rigorously educated in the more mundane, but no less important calculations necessary for the accurate measuring of timber. Richard More's *The Carpenter's Rule* first published in 1602 for the Company of Carpenters in London, or *The Carpenter's Rule Made Easie* (1658) written by John Darling for the county and city of Worcester³³ were books, written by practising carpenters, that gave clear instructions as to the best means of measuring volumes of timber. The latter publication was recommended for use by,

carpenters, joyners, masons, glasiars, painters and sawyers. Or any others that have occasion to buy or sell or make use of any such kinde of measure for themselves or others...³⁴

³¹ Pryke, 'Eighteenth Century Furniture Trade in Edinburgh,' p.53.

³² Pers.comm. Charles McKean.

³³ Richard More, *The Carpenter's Rule*, (London, 1602) and John Darling, *The Carpenters Rule Made Easie*, (London, 1658).

³⁴ Darling, *Carpenters Rule*, frontispiece.

The texts explained how to make a precise two foot ruler and use various tables of board measures for calculating volumes and prices, as well as the common errors to be avoided that often occurred when measuring timber. Specific problems noted were the inaccurate measurement of timber that was ‘broader one way then the other’ and which usually resulted in the buyer losing out from the calculations most commonly adopted. Another widespread problem was the measurement of round timbers, which generally resulted in the seller losing out.³⁵

Richard More also included ‘...many plaine waies, truly to measure ordinarie Timber, and other extraordinarie sollids, or Timber....’³⁶ He also aimed to educate his fellows to appreciate the errors that were commonly made in the calculation and purchase of timber, which wasted both money and timber. He applied Euclidian principals of geometry to provide solutions for accurately calculating volumes. In the preface to *Carpenter’s Rule* he encouraged his fellows to read *Euclides Elements of Geometrie*, recently translated by Sir Henry Billingley (published by the same publishing house as his own book). Less demanding, perhaps, were the calculating and multiplication tables in Darling’s book specifically aimed at those who ‘cannot read’ and for those, ‘...to whom the plainest things will seem hard....’³⁷ It contained many diagrams illustrating how to use the tables. Even though these books were written and published in England, whether a mason, joiner (wright), carpenter, sawyer or glazier, they demonstrate the depth of skill and knowledge required for seventeenth century Scottish craftsmen to be successful. Such knowledge and skills were certainly recognised in Scotland. The Glasgow mathematician James Corss³⁸ published a book *Practical Geometry* in 1666, which was

fitted for the ingenious of all Ranks and Professions, whether Military, or Civil: but principally for Artificers, Massons, Wrights, Surveyors of Lands or Buildings, Engineers, military Architects, Gunners, Myners, and all other Students in the Mathematics.³⁹

³⁵ Ibid., pp. 83-89.

³⁶ More, *Carpenters Rule*, frontispiece.

³⁷ Darling, *Carpenters Rule*, p.4.

³⁸ D.J. Bryden, “Corss, James (fl.1658-1678),” in *Oxford Dictionary of National Biography*, ed H.C.G. Matthew and Brian Harrison (Oxford, 2004), <http://www.oxforddnb.com/view/article/72141> (accessed April 15, 2009)

³⁹ James Corss, *Practical Geometry* (Edinburgh, 1666).

Literacy levels in Scotland meant that most apprentices would have been able to read these texts.⁴⁰ The costs, however, are likely to have been prohibitive for many, but there is evidence of the widespread dissemination of cultural knowledge in Scotland, demonstrating that many books were known and available. This is evident for example from the decorative schemes employed on painted and plaster ceilings, and also in the design of buildings where many references to pattern books can be found.⁴¹ That an understanding of geometry was considered a necessary skill for those involved in the building trades is shown in a drawing of John Mylne (d.1657),⁴² portraying him with several books (Figure 37). These represent his engineering expertise and include volumes of not only Euclid, but also Archimedes and Apollonius ‘the Great Geometer’⁴³. Baine’s later achievements in implementing different orders in his work suggest that he too had access to classical works such as Palladio or Vignola, as well as Euclid for an understanding of geometry would certainly have been essential for the construction of roofs and wider floors, as well as in his role as a timber merchant.

⁴⁰ Following the Reformation in Scotland John Knox promoted learning for everyone in his *Book of Discipline*, this provided an outline for national education for all ages: from parish primary schools to universities.

⁴¹ Michael Bath, *Renaissance Decorative Painting in Scotland*, (Edinburgh, 2003), and Wemyss, ‘Aspiration and Ambition.’

⁴² John Mylne of Perth d.1657, he was master mason to Charles I. His son, also John Mylne (d.1667) became the King’s Master Mason in 1636. See Mylne, *Master Masons to the Crown*, facing page 104.

⁴³ Apollonius of Perga, see www-history.mcs.st-and.ac.uk/Biographies/Apollonius.html. Accessed 05/02/2010.



Figure 37: Portrait of John Mylne d.1657 master mason to Charles I, seen here displaying his engineering credentials with volumes of Euclides, Archimedes and Apollonius on a shelf beside him.
© Scottish National Portrait Gallery.

CHAPTER 5: JAMES BAINE – CRAFTSMAN AND ENTREPRENEUR

*an honest and ingenuous spirit...*¹

James Baine appears amongst the wrights of Mary's Chapel in each of the surviving annual roll calls of the Incorporation between 1669 and 1695. The earliest reference is found in the 'Edinburgh Register of Apprentices of the City of Edinburgh 1583-1666,' with James Baine, son to John Baine burghess of Musselburgh, apprenticed to Alexander Cleghorn - wright and member of the Incorporation of Mary's Chapel in Edinburgh - on 31st December 1651.² Six years later by 14th October 1657, he had become a burghess and guild brother, a status necessary for him to operate as a merchant in Edinburgh. This implied that Baine's apprenticeship lasted for only six years, which suggests that by the mid-seventeenth century the minimum requirement may have already been reduced by one year.³ Since he was indentured in 1651, and an apprentice had to be younger than 21 at the time of registration, it also implies a birth date of c.1630 or later.⁴ As Baine's father was a merchant in Musselburgh and Baine remained unmarried during his apprenticeship, he would certainly have been required to produce the essay piece to be admitted as a member of Mary's Chapel. On its completion to the satisfaction of two masters appointed to oversee his work; and on the production of his burghess ticket, he would have been able to become a burghess. In 1657, Baine transferred from being apprentice to journeyman, at which stage he was permitted to earn wages, but not independently, only via his employer Cleghorn. This would have provided Baine with a regular income, and may have

¹ K.M.Brown et al (eds), *The Records of the Parliaments of Scotland to 1707* (St.Andrews, 2007-2009), 1696/9/184. Date accessed: 9 May 2008.

² Francis, J. Grant (ed), 'Edinburgh Register of Apprentices of the City of Edinburgh 1583-1666', in *Scottish Record Society*, 1906, p.13.

³ Charles Brodie Boog Watson, 'Roll of Edinburgh Burgesses & Guild Brethren; 1406-1700,' in *Scottish Record Society*, 1929, p.43.

⁴ Pryke, 'Eighteenth Century Furniture Trade in Edinburgh,' p.50. Pryke believes that these laws remained fairly constant thus a change in the number of years required may have occurred earlier on in the history of Mary's Chapel.

provided sufficient means required for his marriage to Marie Dreden in November 1658.⁵

Baine's marriage occurred after he had become a master wright and burgess, which suggests that there was no advantage to him marrying Marie Dreden earlier *i.e.* Dreden's father was neither a member of Mary's Chapel nor a merchant burgess of Edinburgh.⁶ Following his marriage, Baine then took on his first apprentice, John Menzies, in December 1658, thus after only one year working as a journeyman he was working independently of Cleghorn.⁷ This indicates that he benefited from some form of patronage, probably through kinship with influential individuals in Edinburgh.

Once Baine had acquired the status of a merchant burgess in Edinburgh, he would then also have been able to operate as a merchant in the timber trade. Imported timber destined for Edinburgh would have been landed at the Timber Howff or Bush (Bourse) at Leith (Figure 38).⁸ By the late sixteenth century, the storage of timber landed at Leith had begun to cause a serious problem on the streets around the shore. There was no charge for its storage, but there was no security either, and this became an issue for foreign ships landing timber. It was less of a problem for local importers and owners since they could store their timber in their own close or yard. In 1578, to resolve this difficulty, the Burgh purchased an area of land close to the shore. It was known as Ramsay's Bastion, but had already been referred to as the Bourse, and eventually became known as the Timber Bush or market where timber could be bought and sold. Some local timber men, however, continued to store their wares at their own yards.⁹

⁵ Henry Paton, *The Register of Marriages for the Parish of Edinburgh 1595-1700*, Scottish Record Society (1905) p.40.

⁶ Stevenson, *The First Freemasons*, p.15 and Edinburgh City Archives: SL34/1/1, p.102, In contrast to the architect-mason James Smith, who married the daughter of Robert Mylne (the King's Master Mason) and then qualified as a member of Mary's Chapel in 1680 without having to undergo an apprenticeship. Unusually Smith is listed in the roll call for masons as Mr James Smith, the only member of the Incorporation of Mary's Chapel to have his name prefixed with Mr.

⁷ Bamford, *The Dictionary of Edinburgh Wrights* p.41.

⁸ Sue Mowat, *The Port of Leith: its History and its People*, (Edinburgh, 2003).

⁹ *Ibid.*, p.147.

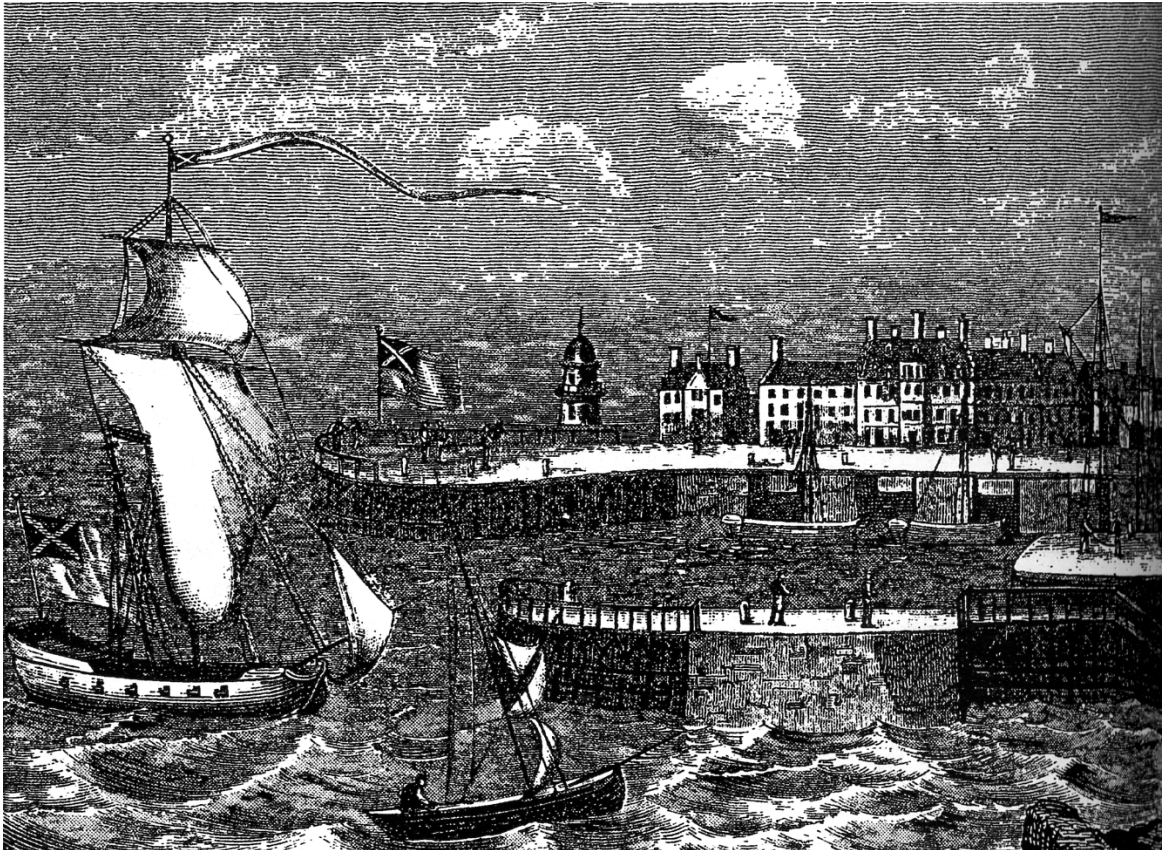


Figure 38: The harbour at Leith c.1700 showing the openings under the pier where timber was floated through to the Timber Bush and where James Baine stored his timber stockpile. © Trinity House

One such merchant was Andrew Rae, who had earlier supplied timber for work at Holyrood, and whose testament indicates both timber stocks and their prices at the time of his death in 1634: 250 spars £30; 200 good deals £80; 100 worse deals within and without the close £20; 100 double trees £60; 50 single trees £15; 12 joists £18 and 250 Norway knapholt £25. He was a successful timber merchant, and had a further 3,200 merks in ready money in his house, plus household goods and clothes worth a further 200 merks,¹⁰ and an extensive list of debtors owed him more than £6,000. His wife Janet Porteous continued with the timber business herself following his death. She had been involved as early as 1625 with the supply of timber to Holyrood on her own account, which included 600 Norwegian deals,

Item to Jonet Porteous in Leith for sex [hunder] Norroway dailles
at xlviii lib. The [hunder] inde.....ii^clxxxviii lib.¹¹

¹⁰ Thanks to Sue Mowat: Reference[CC8/8/57]

¹¹ Imrie, and Dunbar, *Accounts of the Masters of Works Vol.2 1616-1649* (Edinburgh, 1982). p.167. see also pp.156, 200, 209, and 223.

In 1643 the Timber Bourse was extended, and further changes followed in 1658 when it was divided into secure sections or yards that were then leased out by Edinburgh Burgesses. Anyone storing timber there had to pay dues, although the freemen of Edinburgh would have paid more favourable rates than those from other burghs; in the early 1600s, un-freemen had to pay six times the rate of a local burgess.¹² By 1676, when Baine would have been making use of the Timber Howff at Leith and where he probably had his own yard, the storage costs per year ranged from £3 for 100 pieces of wainscot to 1 shilling for individual oak boards or a single great fir timber.¹³ These additional costs, which covered security, would have made the timber considerably more expensive, hence Patrick Smythe's preference for cheaper timber from Norway through Dundee when building at Methven.

In order to meet the timber requirements of all the building operations with which he was involved, Baine, like Rae, would have required access to substantial quantities of both suitable timber and capital. The Records of the Parliaments of Scotland record an *Act and recommendation in favour of James Bain*, dated 17 July 1695 wherein he had,

...at the time of building the palace at Holyroodhouse and reparations of the castles of Edinburgh, Stirling and the Bass, an opulent fortune of about £50,000 Scots worth of timber in the Buss of Leith...¹⁴

How had he acquired this 'opulent fortune' of timber? How significant was Norwegian timber for Baine's enormous stockpile, which was approximately 200 times the value of Andrew Rae's stocks? Although there is no surviving testament for Baine comparable to Rae's listing of timber quantities and values, it is possible to formulate some idea of what he supplied in terms of materials and services, and where he sourced the timber that was required for specific building works.

Since Scottish sources were considered inferior and were usually inaccessible, for Baine to supply all the types of timber and timber cuts required for building work, he needed to import

¹² Mowat, *The Port of Leith*, p.147.

¹³ Ibid., p.206.

¹⁴ K.M. Brown et al eds, *The Records of the Parliaments of Scotland to 1707*, (St .Andrews, 2007-2009), 1695/5/219. Date accessed: 16 April 2009.

timbers from abroad. For the buildings works at Panmure, he supplied deals of oak and pine, wainscot, knapholt and occasionally trees or baulks, some of which were certainly sourced from Norway. Norwegian oak sources may not have always been wholly reliable, and although oak knapholt did arrive at Dundee from Norway, Baine may have had to source some wainscot (if oak) and additional knapholt either from the Baltic- probably Kaliningrad - or from the Netherlands where finer boards and planks were also produced.

Whilst it is reasonable to assume that Baine imported significant quantities of timbers from abroad, there is little surviving evidence to connect him directly to such transactions. He appears neither to have had a share in a ship nor chartered vessels to purchase timber from Norway, the Baltic or the Netherlands. Two ships delivered timbers from Norway to Dundee for the earl of Panmure that do not appear to have been acquired through Baine. However, he supplied substantial pieces of knapholt to Panmure for the great staircase, and these could have been purchased directly from Norway and when required, shipped to Dundee from his stocks at Leith for use at Panmure. There is also evidence that Baine sometimes purchased timber from other merchants, and also skippers, but the information does not record the timber's source. In 1679 he received a cargo of timber valued at £1,514 from Thomas Knox (a Bo'ness skipper) and in 1680, bought timber, 'all lying in the bush at Leith', from James Baird a merchant in Stirling for £632.¹⁵ In 1684 Baine was listed as a debtor owing £607 to Charles Charters (a merchant in Edinburgh) who had provided Baine with wainscot planks, knapholt and clapboard.¹⁶ The most direct link to Baine providing foreign timbers was at Glamis, where he supplied Norwegian *drunton* deals (*i.e.* from Trondheim) on two occasions in 1675 and 1676. The first shipment was for 400 *thick drunton* deals at a cost of £54 per 100; the second shipment was for 400 *drunton* deals at £27 per 100 - half the price of those described as thick deals. These may have been forwarded from his stock at Leith after having been acquired by Baine from Norway.¹⁷ What is certainly apparent is that Baine kept an extensive range of timber materials stockpiled at his

¹⁵ RD2/52 p.325-326 and RD4/47

¹⁶ NAS Admiralty Court Records AC7/6 (West Register House)

¹⁷ NRA 855/148/1/44

yard in Leith in readiness for the many building works with which he was involved. By specialising in imported timber for building works Baine's business organisation represents a much earlier example of "vertical forward integration" than that first recognised by Alan Thomson in the Glasgow building firm of Bogle and Scott in the 1770s.¹⁸ This form of business organisation is adopted to improve efficiency and coordinate different stages of production or "to exploit monopolistic advantages at one level to reduce competition at another."¹⁹ By maintaining a stockpile of building timber- perhaps the most extensive stocks in Edinburgh, possibly even Scotland – Baine would have had a major advantage over his competitors in the building trade.

Is the notable lack of evidence connecting Baine with the overseas timber trade in the 1670s due to a decrease in its availability? He had already acquired an enormous stockpile of timber so was not short of supplies. Alternatively, were regular disruptions to the timber trade one of the reasons that Baine maintained such an extensive stockpile of timber? Scarcity of timber was a periodic problem for the building trades in Edinburgh - so much so that an act was passed in 1671 by the Incorporation of Mary's Chapel in an attempt to prevent loss of work for members in the case of a breakdown in timber supplies.²⁰

Act anent a stock ... for keeping of timber in leith: The same day the deacons masters and brethren of the wrights amongst themselves ordered that the most able men amongst them should with advice of the deacons and masters of wrights joyn in each of the soum of ane hundred pounds Scotts for keeping of ane common stock of timber for service of the wholl brethren of wrights when occasion offers that timber is scarce to be had.²¹

In 1671 there were 45 master wrights listed as members, and if all of them had the means to contribute to this scheme then timber to the value of £4,500 could have been purchased. This would have both permitted the men of Mary's Chapel to remain in work by always having materials on hand. Shortages of timber may have occurred for a number of

¹⁸ Alan Thomson, 'The Scottish Timber Trade, 1680-1800,' p.265.

¹⁹ *A Dictionary of Economics*. John Black. (Oxford, 2002). *Oxford Reference Online*. Oxford University Press, Dundee University. Accessed 3 May 2004

²⁰ This was a typical precaution taken by most of the trades.

²¹ Edinburgh City Archives: SL34/1/1, Minute Book 1669-1686

reasons: over exploitation of stocks; bad weather; increased competition from other markets and conflicts. There were several occasions when trading abroad would have been disrupted, particularly by the Anglo-Dutch Wars, 1665-1667, 1672-1674 and 1680-1684. These conflicts would have prevented timbers from the Netherlands being imported and rendered voyages to Norway and the Baltic more difficult. For example, the Dutch wars prevented Sir William Bruce in 1672 from importing wainscot boards for building works at Thirlestane for the Duke of Lauderdale. Instead they were bought in Bremen.²²

The fire of London in 1666 also had a significant impact on the timber trade, as it created a competitive demand for timber. Despite its perceived inferior quality, Samuel Pepys was interested in buying Scottish timber from the Balnagown estate in Rosshire for the rebuilding of London, which suggests that there were serious problems with supply from overseas, or perhaps that there were some areas of better quality timber still available in Scotland.²³ For Scottish skippers carrying Norwegian timber, it was more profitable to sail to London where better prices could be obtained, a practice adopted several times in 1668 by the Watson merchants of Pittenweem. Having bought deals at Trondheim or Molde in Norway, they would wait for information on where the best prices were to be found. Nor was London the only potential destination: Ireland and Iceland were also profitable markets.²⁴

Although supplies were disrupted from 1672 to 1675, ships were still arriving at Dundee with timber from Norway, during which time a total of eight cargoes were recorded (although none in the DSL in 1674). At the same time, Skipper Gillespie from Elie continued to sail to western Norway for timber in spite of the Scottish privateers who disrupted trade there. At Glamis, the scarcity of timber for building works in 1673 was noted, and there was 'none to be had at Old Montrose at this time.'²⁵ Hard winters in Norway also reduced the supply of timbers: rivers remained frozen and timber could neither be floated down the rivers, nor was there power

²² J.G. Dunbar, "The Building-activities of the Duke and Duchess of Lauderdale, 1670-82" in *Archaeological Journal* Vol.132 (1976) pp.206.

²³ MacDonald, 'The Royal Navy, Holyrood and the Pinewoods of Strathcarron', p.327.

²⁴ Watson papers: ms 38527/1/1/1; 1/2/1; 1/2/7 and 1/3/5 St. Andrews University Archives.

²⁵ NRA 855/198/6/22

to drive sawmills for processing timber into planks and boards.²⁶ Nevertheless, the earl of Strathmore still continued to import timber from Norway for Glamis in his own ship the *Lyon* during the 1670s, while Baine was working there as main contractor. Thus although the trade with Norway may have become more difficult at times, it still remained a significant destination for collecting timber.

During the 1660s and 1670s, Baine also bought native timbers suitable for building construction from David Ross of Balnagown.²⁷ His first purchase was contracted for in 1667, in a joint venture with Andrew Cassie, (King's Master) slater and fellow member of Mary's Chapel. The contract was for 5,000 deals, 500 spars, 500 joists and 200 unsquared trees. While too early for use in the major modifications at Holyrood, it may have been needed for repairs before the opening of Parliament in October 1669, or for Baine's work at Panmure.²⁸ At the same time, Baine was involved with building work for a Thomas Wilson on a tenement of land (probably on Edinburgh's High Street) that amounted to £1,400. This work included raising five stories on the north and two on the south end of Wilson's lodgings. It was carried out jointly with Alexander Nisbet, mason and member of Mary's Chapel, with whom Baine was to work with again at both Panmure and Glamis.²⁹

Three further contracts for timber between Baine and Balnagown guaranteed Baine regular deliveries of timber to Leith until 1678. This coincided not only with his work at Holyrood, but also with the busiest period of his career. For Balnagown, the sale of timber was an effective means for paying off his many debts. Alan MacDonald has suggested that Balnagown was able to exploit Baine's ready access to government capital whilst undertaking work at Holyrood, and used his association with Baine as a means of securing additional credit. Instead of receiving payments from Baine, he got Baine to pay his creditors off when his timber

²⁶ English ports were also affected by scarcity of timber and Bridlington in East Yorkshire experienced similar problems in 1677. See David Neave, *Port, Resort and Market Town: A History of Bridlington*, (Hull, 2000).

²⁷ MacDonald, 'The Royal Navy, Holyrood and the Pinewoods of Strathcarron', pp. 319-339.

²⁸ Iain MacIvor and Bent Petersen, 'Lauderdale at Holyroodhouse, 1669-70', in David Breeze (ed), *Studies in Scottish Antiquity*, (Edinburgh, 1984) pp.249-268.

²⁹ RD2/17, pp.448-451

arrived at Leith.³⁰ In 1667, Baine paid out £2,460 to Balnagown's various debtors in exchange for the timber that he had received. In 1674, Baine also lent Balnagown 2,500 merks, for which he was still seeking repayment in 1691, along with his many other financial grievances.³¹ Ironically, Parliamentary records relating to Baine's later bankruptcy seem to suggest that it was actually Baine who provided the Crown with capital and raised money from his own clients to help finance the ongoing works at Holyrood.³² That implies that Baine was not only a reliable source for the supply of building timber, but that, as a successful businessman, he could offer something perhaps even more significant; namely access to credit.

Baine's contract with Balnagown dated 26 February 1674 prescribed exact dimensions of 'English measure' and cuts of pine timbers to be produced by the estate's own saw mill. The quantities listed in this contract were to be supplied annually and delivered to the shore at Leith for three successive years; the approximate total value of this timber came to £9,000 Scots (Figure 39).³³

Timber Cut	Quantity	Length	Breadth	Width	Price	
great joists	80	26 feet	10 inches	10 inches	£007 00 00	£560
great joists	80	28 feet	12 inches	12 inches	£007 00 00	£560
fir joists	400	24-26 feet	7-8 inches	7-8 inches	£001 06 08	£533
spar roofs	400	22-24 feet	5-6inches	5-6inches	£000 18 00	£360
wide fir deals	3000	10-20 feet	1.5 inches	10-20 inches	£000 06 08	£1,000
					Sub-total p.a.	£3,013
					Total	£9,039

Figure 39: Pine timber supplied by Ross of Balnagown to James Baine 1674-1677, measured in English feet.

This contract alone was roughly equivalent to the entire (known) expenditure on timber for the building of Panmure House, with similar dimensions to the timber used for the roof structure. Particularly significant was the stipulation of 'English measure,' indicating that

³⁰ MacDonald, 'The Royal Navy, Holyrood and the Pinewoods of Strathcarron', p.334.

³¹ *Ibid*, MacDonald, 'The Royal Navy, Holyrood and the Pinewoods of Strathcarron', p.334.

³² Brown et al eds, *The Records of the Parliaments of Scotland to 1707*, 1695/5/219.

³³ RD4/70, pp.322-324. A further agreement in 1675 included similar cuts and dimensions, but also great trees (joists) that were to measure 33 feet in length for the same price as those listed in previously; RD2/39; additional references RD2/39, MFiLDN(Microfilm)/RD4/60, RD4/70, RD2/60, RD3/40.

precise dimensions were required. The plans by John Mylne for Holyrood also stated Scots or English feet. However, these quantities alone would not have been sufficient for either the works at Holyrood or his other building works. For example in January 1674, he supplied timber worth £5,667 for Holyrood, and a single payment for Stirling Castle in May 1675 for timber and wright work came to £3,566, whereas another payment to Baine for deals and great joists supplied to Holyrood in June 1677 cost the Crown £6,593.³⁴ If he was to continue as main timber contractor for all such works during the 1670s, he clearly required several sources for timber.

One agreement for timber made by Baine was with Balnagown's close neighbours and kinsmen Walter and William Ross of Invercharron,³⁵ a contract eventually discharged in 1683.

³⁶ It contains very little detail on the timber and prices, mentioning only timber deals, but may have been related to or even a continuation of an earlier agreement in 1665 between Walter Ross of Invercharron and George Baine, (merchant burgess of Edinburgh and probable relative of James Baine). It originally concerned the sale of 2000 deals delivered to Leith in 1666.³⁷

The precise relationship between George Baine and James Baine has proved difficult to establish with any certainty.³⁸ The evidence suggests that they did have familial links, particularly as James Baine was nominated as tutor to George Baine's son, also named James Baine (b.1673)³⁹, a position usually allocated to an uncle. In this case, the relationship has been difficult to confirm, and the document concerning the tutelage of George Baine's son does not address James Baine as his 'brother-germane' as would be expected if they were brothers. What was apparent was that George Baine was a very successful merchant in Edinburgh with

³⁴ R.S. Mylne, *The Master Masons to the Crown of Scotland and their Works* (Edinburgh, 1893) p.201 and p.199.

³⁵ William Ross, second son of Sir David Ross, the 7th Laird of Balnagown, he became the 1st of Invercharron and was also known as William of Ardgay. Source www.tainmuseum.org.uk, accessed 15 May 2009.

³⁶ RD2/60, pp.378-379.

³⁷ MacDonald, 'The Royal Navy, Holyrood and the Pinewoods of Strathcarron', p.332.

³⁸ George Baine married his second wife Margaret Monteith in 1671. His first wife may have been Elizabeth Colville (d. May 1669), with whom he had two daughters Elizabeth and Catherine. George Baine of Peebles Wynd died March 1676 (or 1678). Both Baine and his wives were buried at Greyfriars as was his daughter Elizabeth in December 1686, who was married to Andrew Balfour a writer to the Signet who was also factor for her step-brother James Baine along with James Baine His Majesty's Wright.

³⁹ RD2/45 pp.245-246; this document is dated January 1678 which does not agree with George Baine's burial date of March 1676, but may indicate the date when the document was recorded in the Register of Deeds rather than when it was originally written and implemented.

extensive property and assets, and which Baine was to administer for the young James Baine until he came of age in 1694.⁴⁰ It is quite likely that George Baine had kinship connections with Rosshire, and that he was kin to the Baines of Tulloch. John Baine Writer to the Signet, later of Pitcairlie in Fife, certainly descended from this family, and was often witness/author of the contracts for the building works at Holyrood.⁴¹ His father was Donald Baine, a bower in Edinburgh, who would also have been a member of Mary's Chapel. Perhaps George and John were brothers. Both were buried at Greyfriars in Edinburgh, as was James Baine's wife and their children. John Baine of Pitcairlie has an elaborate mausoleum still standing there (Figure 40).⁴² It may be through this kinship connection that James Baine received the opportunity to serve his wright's apprenticeship in Edinburgh at Mary's Chapel, and that these influential men, George and John Baine, were his father's uncles or cousins.⁴³ Furthermore, Baine's contracts for timber with the Ross's of Balnagown and Invercharron may have been assisted by kinship ties in Rosshire that gave him privileged access to valuable timber supplies.

⁴⁰ RD4/75 pp.476-478.

⁴¹ Mylne, *Master Masons to the Crown of Scotland* p.192.

⁴² James Baine's (King's Master Wright) wife Marie Dreden was also buried here February 1688, probably with a number of their children and certainly one of them - William who died in February 1676.

⁴³ John Bayne/Baine died in 1681 and bequeathed bursaries for students at the then College of Edinburgh, see CC8/8/76 Edinburgh Commissary Court.



Figure 40: John Baine of Pitcairle's (d. 1681) richly decorated mausoleum built c.1684 *in situ* at Greyfriars' cemetery, Edinburgh. His father was Donald Baine; bower in Edinburgh and a descendant of the Tulloch family of Rosshire. The first Baine of Tulloch was Duncan, who received a charter in 1541 giving him the lands of Tuich or Oulch, later Tulloch.⁴⁴ Photograph: author 2009.

⁴⁴ *The Society of Writers to His Majesty's Signet: with a list of members and abstracts of the minutes of the Society, the commissioners and the council and the early history of the Scottish Signet*, (Edinburgh, 1936) p.73.

CHAPTER 6: THE KING'S CRAFTSMEN AND HOLYROOD

The most active period of Baine's career was the decade from 1668 to 1678, and it is generally accepted that he received official status as *His Majesty's Master Wright* during this time. Although the warrant of his royal appointment has not been found, the Minute Book of Mary's Chapel first referred to him as his Majesty's Master Wright in April 1671, and this is the earliest reference to Baine's elevated status. In the contracts for work at Panmure dated 1668 and 1669, contrary to Rev. R.S.Mylne's assertion, he was referred to only as 'wright burgess of Edinburgh'.⁴⁵ It was not until June 1672 that he was addressed at Panmure as '...the kings Maister wright'.⁴⁶ However, amongst the papers from Baine's petitions presented to parliament in the 1690s, it was stated,

...King Charles the second his gift for being master plasterer, dated the seventeenth of January j^M vj^C and sixty one, allowing him ane hundred pound money forsaied per annum, current till the year j^M vj^C and eighty fyve, which extends to two thousand and four hundred pounds money forsaied.⁴⁷

Not only does this statement tell us that Baine never received any of the payments due to him for this official position (this sum amounts to only a small fraction of the long list of grievances concerning money that was owed to him by the Crown), but perhaps more importantly it tells us that he received an initial royal appointment (albeit as His Majesty's Plasterer) ten years earlier than previously appreciated. What is surprising, however, is that this occurred only four years after completing his apprenticeship as a wright. Baine's elevation to His Majesty's Master Plasterer so early in his career required powerful patronage and may

⁴⁵ R.S.Mylne, 'Notices of the King's Master Wrights of Scotland, with writs of their appointments', *PSAS* 34 (Edinburgh, 1899-1900) p.291.

⁴⁶ NAS GD45/18/571-3 & 4; NAS GD45/18/600

⁴⁷ Recommendation in favour of James Bain; *The Records of the Parliaments of Scotland to 1707*, K.M. Brown et al eds (St Andrews, 2007-2009), 1696/9/184. Date accessed: 17 April 2008.

therefore have been due to influential kinship with George Baine, merchant burgess, or John Baine Writer to His Majesty's Signet.⁴⁸

There are many fine examples of plaster work to be found throughout Scotland dating from the early seventeenth century, and such evidence as found at, amongst others, Pinkie, Winton, Moray House, Glamis and Craigievar suggests highly skilled and specialist craftsmen. However, Mary's Chapel did not specifically include plasterers as members.⁴⁹ Does this mean that there were actually so few skilled plasterers in Edinburgh that there were not enough to establish their own incorporation or guild? If that was the case why were plasterers not included along with the other building trades that formed the Incorporation of Mary's Chapel in Edinburgh?⁵⁰ There were, after all, several trades represented that had only two or three members; the wright upholsterers were represented by only one member until 1675.⁵¹ Furthermore, how and where did Baine learn the necessary skills for plastering? Was there some overlap between joinery and plasterwork in burghs where there were no suitably qualified plasterers? In Edinburgh were some elements of plastering work incorporated into a wright's apprenticeship?⁵²

In 1659, the Dundee Incorporation of Wrights had joiners, glazing wrights, wheel wrights, square wrights, painters, lint wheel wrights and later also reed makers amongst their membership, but no plasterers.⁵³ By 1700, however, the Perth Incorporation of Wrights counted amongst their membership plasterers, masons, barbers, glaziers, coopers and slaters. Although

⁴⁸ *The Society of Writers to His Majesty's Signet* p.73.

⁴⁹ Following Baine's death in 1704 his brother William continued to petition Parliament on behalf of his brother for the money still owed and may have been the same William Baine who was paid for plaster work by the Viscount of Tarbart in 1690. NAS GD 305/1//152/255: thanks to William Napier for bringing this document to my notice.

⁵⁰ For the Perth Incorporation an additional benefit of grouping several crafts together like this meant that the collective membership was able to purchase meal in bulk and thus reduce the unit price to fellow freemen. In 1741 this was also a prime reason for the creation of the Three United Trades in Dundee that comprised of wrights, masons and slaters see Smith, A., *The Three United Trades of Dundee: Masons, Wrights and Slaters*, Abertay Historical Society Publication No.26 (Dundee, 1987).

⁵¹ See Appendix II: Members of the Incorporation of Mary's Chapel 1669-1695.

⁵² In London there were individual Livery companies for joiners, carpenters and plasterers. The Company of Plasterers received its first Charter from Henry VII in 1501.

⁵³ Warden, *The Burgh Laws of Dundee*, pp.584-594.

when this practice started is not clear,⁵⁴ it was common for Perth wrights to enter more than one of the sciences that were considered as “complimentary arts for the sake of construction...” thus wrights were often also plasterers or glaziers in Perth. The only exception to combining trades was recorded in an act of 1664 that stated a wright could not become a cooper or vice versa.⁵⁵

Baine was generally referred to as the king’s master wright in the documents examined, although there were earlier instances of the king’s master wright holding two positions; Sir James Murray of Kilbaberton was made principal master wright and gunner ordinary in 1601 by James VI. This was the most common combination in the list of King’s Master Wrights produced by R.S. Mylne.⁵⁶ Murray was also the king’s master of works under Charles I and was one of the earliest examples of a master craftsman referred to by contemporaries as an architect.⁵⁷ However, the only combination of carpenter and plasterer that Mylne identified was George Campbell “His Majestie’s House Carpenter and Plaisterer in Scotland” who received his commission from George II in 1748.⁵⁸ The only reference to Baine as the King’s Master Plasterer is the petition to Parliament dated 1696. The use of the title ‘His Majesty’s Master Wright’ in surviving documents occurred mainly after c.1671, once the work at Holyrood had begun under Sir William Bruce, and where the principal plasterers –Hulbert and Dunsterfield – were imported from England to undertake the work.⁵⁹

As Surveyor of the King’s Works, it was Bruce’s responsibility at Holyrood to organise and employ all the necessary master craftsmen and trades for the building work. These included Robert Mylne master mason, James Baine master wright and plasterer, Andrew Cassie master slater and John Masterton as glazier. As the king’s master craftsmen, they were all entitled to certain privileges one of which would have been an annual payment, which in Baine’s case was

⁵⁴ Further research comparing the earlier records of the Perth Incorporation with those of Mary’s Chapel would reveal more information of plasterers and their organisation, but was considered as being out with the scope of this thesis?

⁵⁵ Petznick, *The Wright Incorporation of Perth Minute Book*, pp. 63-64 and Graph 2.

⁵⁶ R.S.Mylne, ‘Notices of the King’s Master Wrights of Scotland...’, *PSAS* 34 p.288-296.

⁵⁷ M^cWilliam, *The Buildings of Scotland: Lothian*, p.54.

⁵⁸ *Ibid.*, p.295.

⁵⁹ Mylne, *The Master Masons to the Crown of Scotland and their Works*, p.195, and Dunbar, ‘The Building-activities of the Duke and Duchess of Lauderdale 1670-82’ in, *Archaeological Journal*, vol. 132 (1976) pp. 209.

£100 annually, payable from 1661. His additional title of His Majesty's Wright probably entitled him to further payments as well. The most important privilege associated with their positions was that they were, '...excused and declared free of all *Stents* Taxations Watchings Wardings and other impositions whatsoever that can be imposed upon them....' ⁶⁰ As guild brethren and merchant burgesses, being exempt from taxes would have given their businesses a significant advantage over their competitors in Edinburgh. As owners of land or property they would not have been liable for tax on these, or for any income received from lending money to others. This privilege created a considerable advantage for Baine's business interests, who probably also benefited from tax exemptions on any customs duties connected with timber imports. ⁶¹

All of the Holyrood craftsmen except Masterton were members of the Incorporation of Mary's Chapel in Edinburgh, indicating the Incorporation's influence in the employment of its members in Crown works. ⁶² By 1676, the number of wrights at Mary's Chapel had risen by 22% (that is to 63 from 49 in 1670), and the total membership had increased by 30% from 106 to 138, reflecting the greater demand for skilled craftsmen in Edinburgh. ⁶³ Wrights continued to dominate the membership of Mary's Chapel for the duration of the seventeenth century, and on average they outnumbered the masons by approximately 3 to 1. In Dundee, wrights similarly outnumbered masons and due to their larger numbers and prosperity, wrights were considered to be the more powerful and dominant of the building trades in the town. By 1635, there were 25 master wrights operating in Dundee against only six master masons by 1659. Masons were also only permitted to become burgesses when the town treasurer determined that they could afford to pay the dues. ⁶⁴ A similar trend was evident in Perth where again wrights formed the majority of the membership. ⁶⁵

⁶⁰ Mylne, *The Master Masons to the Crown of Scotland and their Works*, p.210.

⁶¹ Pers.comm. Dr Alan McDonald.

⁶² Edinburgh City Archives: SL34/1/1-3.

⁶³ See Appendix II: Members of the Incorporation of Mary's Chapel 1669-1695.

⁶⁴ Smith, *The Three United Trades of Dundee* p.46-47 and 61.

⁶⁵ Petznick, *The Wright Incorporation of Perth Minute Book*, Graphs 8 and 9.

Holyrood Palace was recognised as the monarch's residence in Edinburgh, but it had been burnt and re-modelled in the 1650s during the English occupation. There were a number of reasons for refurbishing the palace. Firstly, if Charles II was to visit Scotland, he required suitable accommodation moreover the presence of a newly refurbished royal palace re-affirmed and represented the power of the monarch in his absence. Secondly, for the duke of Lauderdale, the king's representative in Scotland, Holyrood also provided an appropriate and symbolic location for himself and those governing Scotland.⁶⁶

Plans for the building works at Holyrood had been drawn up earlier by John Mylne, and it was on these plans that Sir William Bruce based his work. Baine's responsibilities as master wright extended to not only supplying timber and implementing wright and plaster work, but also demolition work, which may have been carried out by Baine's men so that he could salvage and re-use any suitable timbers as was the norm.⁶⁷ A number of accounts from Holyrood and other Crown works reproduced in *The Master Masons to the Crown of Scotland and their Works* by R.S. Mylne include information on payments to Baine for materials and workmanship at Stirling Castle, Edinburgh Castle and the Bass Rock prison.⁶⁸ They cover the period from 1671 to 1679 and are summarised in Figure 41.

Payments to James Baine for Crown Works(Scots)	£	s	d
Timber 1674-77	13,710	6	
Wright work 1675-1679	5,326	11	8
Plaster work 1671-1679	1,239	8	
Baine's total Holyrood payments	20,276	5	8
Baine's other Crown works	6,424	16	6
Total	26,700	2	2

Figure 41: Summary of payments made to James Baine for work and materials for the Crown works at Holyrood, Stirling Castle, Edinburgh Castle and the Bass Rock 1671 -1679.

The accounts have several implications. First, the purchase of timber accounted for approximately 50% of the total payments made to Baine and came to £13,710. However, if his

⁶⁶ Aonghus MacKechnie, 'Sir William Bruce: 'the chief introducer of Architecture in this country'', in *PSAS*, 132 (Edinburgh, 2002) p. 504.

⁶⁷ Baine and his men demolished the 'Deanes lodgeing West qrtter of the Pallace, the two upper stories therof and gallarie that went off from the Northsyde thereof to the old privie Garden...£945 007 00', in Mylne, *The Master Masons to the Crown of Scotland and their Works*, p.210

⁶⁸ Mylne, *The Master Masons to the Crown of Scotland and their Works*, p.201 – 202.

later claims for the value of his timber stocks were accurate, then Baine was responsible for the supply of substantially greater quantities of timber than these documents record. Second, they show that Baine was responsible for 12.5% of the plaster work at Holyrood, which amounted to little more than £1,000, principally in the Lord Chancellor's lodgings, where he worked from 1671 to 1679. Most of the decorative plaster work was carried out by three English plasterers John Hulbert, George Dunsterfield and Thomas Alborn, who together received approximately £8,000 for their work between 1674 and 1679. They were brought in by Lauderdale and between them worked not only at Holyrood, but also at Thirlestane, Hatton, Balcaskie, Kellie and Wemyss.⁶⁹ According to the discharged accounts published by Mylne the payments for Baine's wright workmanship at other Crown properties amounted to approximately 25% of his total work at Holyrood.

From these summarised accounts, it is possible to calculate approximate numbers of workmen and estimate the time spent at the work. In 1676, Baine's wrights earned 15 shillings per day at Holyrood for a total of 918 days work (£688 18 00) repairing 'several stories of the north quarter and putting up the timber scale stair there'.⁷⁰ Assuming his men were all fully qualified wrights, ten men could have completed this work in approximately three months, or 20 in six weeks. The previous year, his men received 16 shillings per day for work at the Bass Rock, where the total wages equalled £1,491 04 00, or the equivalent of approximately 1,864 days work.⁷¹ The higher wage may have been due to the location and difficulties involved with working there. To have completed this work in a single year, working a six day week with Sundays off, would have required approximately five men working full time or ten men over six months.⁷² An Edinburgh master wright then could expect an annual wage of between £234 and £250, which compared favourably with the rates of rural wrights. At Panmure, before Baine arrived, the local wrights were paid only 12 shillings per day, or £187 annually.⁷³ However,

⁶⁹ Dunbar, "Building-activities of the Duke and Duchess of Lauderdale, 1670-82" pp.210-11.

⁷⁰ Mylne, *The Master Masons to the Crown of Scotland and their Works*, p.199.

⁷¹ *Ibid.*, p.202.

⁷² Malcolm Airs, *The Making of the English Country House 1500-1640* (London, 1975), p.157.

⁷³ NAS GD45/27/128

additional receipts addressed to James Baine covering the period from 1673 to 1676, overlooked by Mylne, add significantly to the quantity of wright work that he must have executed at Holyrood. Seven separate receipts, all paid to Baine, usually by Sir William Sharp King's Purse Keeper and generally in pounds Sterling, (but sometimes in Scots) came to £138,462 (£11,540 sterling) as outlined in Figure 42.⁷⁴ This is nearly seven times the total payments estimated by Mylne that Baine received for work at Holyrood.⁷⁵ The amounts of the payments also vary enormously suggesting that the receipts may have been for timber rather than labour. However the receipts clearly state that they are for 'workmanship' with no mention of timber, perhaps indicating periods of intense building activity at Holyrood when substantial supplies of timber were acquired from Baine's extensive timber stocks. The payment of £120,000 Scots in September 1673 is particularly significant and may represent the completion of a major piece of work by Baine and his men. It also coincides with the busiest period in Baine's career when he was working simultaneously on at least nine different buildings.

Document	Month	Year	Amount (Scots)	Amount Sterling
E67/8/7	January	1673	200	17
E67/8/7	May	1673	1800	150
E67/8/7	June	1673	7200	600
E67/8/7	September	1673	120000	10000
E67/8/7	November	1673	2400	200
E67/8/7	January	1674	600	50
E67/12/6/1	March	1675	2340	195
E67/12/6/2	March	1676	922	77
E67/12/6/3	May	1676	400	34
E67/12/6/4	September	1676	1200	100
E67/12/6/5	October	1676	1200	100
E67/12/6/6	December	1676	200	17
			£138,462	£11,540

Figure 42: Additional receipted payments made to James Baine for wright work received from Sir William Sharp 1673 -1676.

These additional figures also present us with the means to calculate a more accurate figure of the wright manpower required for the building works at Holyrood. Taken at the rate of

⁷⁴ NAS E67/8/7: another series of figures totalled £133,000, but there is no additional context to indicate if these were separate payments or a rough calculation of the total so it has been excluded from final calculations- E67/12/6/1-6.

⁷⁵ Mylne does note, that the discharged accounts are only extracts obtained from a book of accounts found at Kinross House, see Mylne p. 194.

15 shillings per day over the three years payments were made to Baine, it would be reasonable to estimate that between 120 and 150 men were employed to undertake the work within such a timescale. This assumes all 120-150 were qualified wrights and represents the minimum number of workmen.

In 1676, there were 63 master wrights who were brethren of Mary's Chapel, each of whom may have had at least one apprentice and/or possibly a journeyman working under him; therefore an adequate number of wrights would have been available, especially once wrights from the Canongate were included. No rates were found for journeymen or apprentice wrights at Holyrood or in the Mary's Chapel Minute Books, but it can be assumed that apprentices earned less than qualified master wrights. An approximate idea of the daily wages received by wrights can be gained by comparing the rates of pay of masons and apprentices employed at Panmure working for Alexander Nisbet in 1668. Masons were usually better paid than wrights as was the case at Panmure. Here, a master mason received 19 shillings per day as did an apprentice with more than three years' experience. An apprentice with only three years' experience was paid twelve shillings; with two years' 6 shillings and an apprentice in his first year received only four shillings.⁷⁶ Thus, based on a day's wage of 15 shillings for a master wright, a new apprentice could expect approximately one fifth of his master's wage - 3 shillings; a two year apprentice one third - 5 shillings; and an apprentice with only three years experience double the previous - 10 shillings. Despite their greater numbers and therefore influence as members of Mary's Chapel, master wrights still earned less than a master mason, implying that a mason's skills continued to be considered more valuable than a wright's.

Several of the wood workers employed at Holyrood were specialist craftsmen such as carvers and turners, whereas others were less skilled such as carpenters employed for sawing deals. Amongst the woodworkers were two wrights from Mary's Chapel who received payments for work at Holyrood on their own account, and therefore worked independently of Baine. The work they undertook was quite specific and may represent their own specialist skills, hence the

⁷⁶ NAS GD45/27/128; NAS GD45/18/566-2

separate payments. In 1674, Andrew Paterson made several plaster moulds for £101 and in 1678 James Porteous made a model of the cupola of the gate for Holyrood, plus a pedestal and balusters, for £24. In 1674, Walter Scheill, a turner from the Canongate, was employed for turning wainscot balusters and hanging 'knups' for the timber 'scale stair in the middle of the north quarter'. In 1679, he was also paid for turning four pillars for the model of the 'outer gate' at 8 shillings per piece, plus 23 wainscot balusters for the top of the 'south scale stair' at six shillings each. In 1677 Thomas Oliphant - who was not listed at Mary's Chapel but may also have belonged to the Canongate - furnished timber and made moulds for masonry work at Holyrood. In 1674 three sawyers were employed for sawing deals for laths at £15 per great 100 (*i.e.* 120) and to saw trees for partitions at 10d per square foot; in total they earned £275.⁷⁷

Members from the other trades of Mary's Chapel who also found work at Holyrood included masons, painters, plumbers, glaziers and slaters.⁷⁸ Foreign craftsmen including wrights and wood carvers, mainly from the Netherlands, were brought to Scotland by the Duke of Lauderdale where they worked both at Holyrood and at Lauderdale's own properties.⁷⁹ Many of them went on to undertake work for other members of the nobility and at the same time were responsible for the introduction of new ideas and methods to Scotland. One of the principal innovations was the addition of sash windows at Lethington, one of Lauderdale's houses in 1672. Although there is no evidence for sash windows at Holyrood until October 1706 (when an estimate was made for the installation of sash windows in the queen's apartments⁸⁰) Baine had taken up this innovation at Brechin as early as 1688.⁸¹

The example of Holyrood can be used to investigate trade organisations, the numbers of craftsmen required, and the wages paid for Crown works in Scotland. Wright workmanship represented a major part of the work undertaken at Holyrood and evidently wrights were

⁷⁷ Mylne, *The Master Masons to the Crown of Scotland and their Works*, p.196-202.

⁷⁸ SL34/1/1-3 and Mylne, pp.195-202

⁷⁹ John Dunbar, 'Lowlanders in the Highlands: Dutch craftsmen in Restoration Scotland', in *Country Life* August 18(1974).

⁸⁰ NAS E28/580/17/1 and 580/17/3: with thanks to Michael Pearce for bringing these documents to my notice. John Dunbar suggested that sash windows were installed at Holyrood in the 1670s, but the painting of Holyrood from c.1721 does not support this, see, Dunbar, *Scottish Royal Palaces*, (East Linton, 1999), p.62.

⁸¹ NAS GD45/18/1616/1

becoming more numerous and influential amongst their fellow building craftsmen. This was to become an important aspect of Baine's work at houses of the Scottish nobility. However, his appointment as the King's Master Wright and Plasterer signalled the highest achievement of his career. It established him as one of the elite master craftsmen in Scotland, a position that gave him many privileges, financial advantages, and valuable business connections.

CHAPTER 7: NETWORKS - CLIENTS AND CRAFTSMEN

Baine's recognition by the Crown would have made him an attractive proposition amongst members of the nobility when they considered which craftsmen to employ for modifying and improving their own houses. During the 1670s, whilst he was involved with the repairs and modifications at Holyrood Palace and other Crown properties (Stirling, Edinburgh and the prison on the Bass Rock), Baine was also occupied to varying degrees with at least eleven other building operations for leading members of the Scottish nobility. Some of Baine's most prominent clients at this time included the duke of Lauderdale, the earls of Panmure, Strathmore, Tweeddale, and Atholl. Usually his work for his patrons concerned more than one property, and, for Tweeddale, his involvement extended to five (Figure 43).⁸²



Figure 43: Known building operations associated with James Baine where he acted as wright, timber merchant and/or main contractor from 1668 to 1694.

Baine's clients were all engaged in the governing of Scotland, and held positions either as treasury commissioners or privy councillors, and were in receipt of large fees for their appointments. Tweeddale was a treasury commissioner and president of the Privy Council from 1663-1672 for which he received an annual fee of £8,000.⁸³ He returned to the Treasury again in

⁸² NAS GD28/2102

⁸³ Charles Wemyss, 'A Study of Aspiration and Ambition: the Scottish treasury Commission and its Impact upon the development of Scottish Country House Architecture 1667-1682', Ph.D. diss., University of Dundee, 2009, Part Two p.8.

1680 and eventually became Lord Chancellor of Scotland from 1692 to 1697. Strathmore became a treasury commissioner in 1682 (after the death of Lauderdale). The earls of Panmure were excise commissioners in Forfarshire, and the fourth earl of Panmure became a member of the Scottish Privy Council in 1686. Charles Wemyss' Ph.D. thesis provides a thought provoking account of the intrigues of these men, their building ambitions and finances. Wemyss demonstrates that all the members of the Treasury Commission were engaged in either improving their own houses or building new ones. These building works were financed by their treasury appointments, which also gave them privileged access to some of the workmen and materials required for Holyrood. The loss of these appointments resulted in their bankruptcy.⁸⁴

Baine's work for Tweeddale included Neidpath Castle, Yester, Pinkie, Bolton (not located) and the earl's town house, Tweeddale House, in the High Street, Edinburgh. At Neidpath, Baine not only supplied timber, but also carried out wright and plaster work, a dual function which he also undertook at Panmure, Brechin, Castle Lyon and Glamis.

A discharged account dated 1674 for work at the five properties owned by Tweeddale came to £1,600 (Scots). The properties where the work was undertaken were not identified, but probably relate to all five.⁸⁵ The account included the provision of timber for all of these places, as well as the earl's coach house and stables in Edinburgh.⁸⁶ More detailed accounts itemised timber supplied by Baine, both sawn and unsawn deals and trees, oak deals and trees (dormant), single and double trees and lathing. Items of furniture either provided by or 'put up' *i.e.* assembled by Baine included an oval table from London, clock cases, door locks, a table for the children in the latter meat hall, and a single tree attached to the wall with pegs for hanging cloaks. The work carried out by Baine and his men included setting up scaffolding, supplying window cases, laying flooring, plastering and whitening of rooms. Baine also sub-contracted the slating of the roof of the 'lodging', presumably Tweeddale House, to an unnamed slater. In the same year Baine, tried to charge Tweeddale twice for the same workmanship and materials,

⁸⁴ Ibid., pp. 63-66.

⁸⁵ NAS GD28/2011; 2004;2101

⁸⁶ NAS GD28/2102

signalling inefficiency on his part; fortunately, Tweeddale went through the account and diligently removed all previously paid for items from it.

Baine's work at Neidpath between 1668 and 1671 amounted to approximately £900.⁸⁷ It is the only property where Baine's work has survived relatively intact (Figures 44-47). An almost complete room of panelling with what may have been either built-in box beds or a series of presses remain within the second floor chamber; similar panelling also remains in the first floor chamber. Baine was also responsible for plastering all the rooms in the castle, and his plastering bill, which included all the necessary timber, other materials and workmanship, came to £133.⁸⁸ In 1982 a severe frost caused the plaster ceiling in the second floor apartment to collapse. This revealed not only the earlier vaulted ceiling, but also the split-lath and rivet technique used by Baine in 1668 when he modernised the room by inserting a flat plastered ceiling.



Figure 44: Neidpath Castle, Peebles where Baine's work can still be found *in situ*. Photograph: author 2005.

⁸⁷ NAS GD28/ 2003; 2004; 2011

⁸⁸ NAS GD28/ 2003

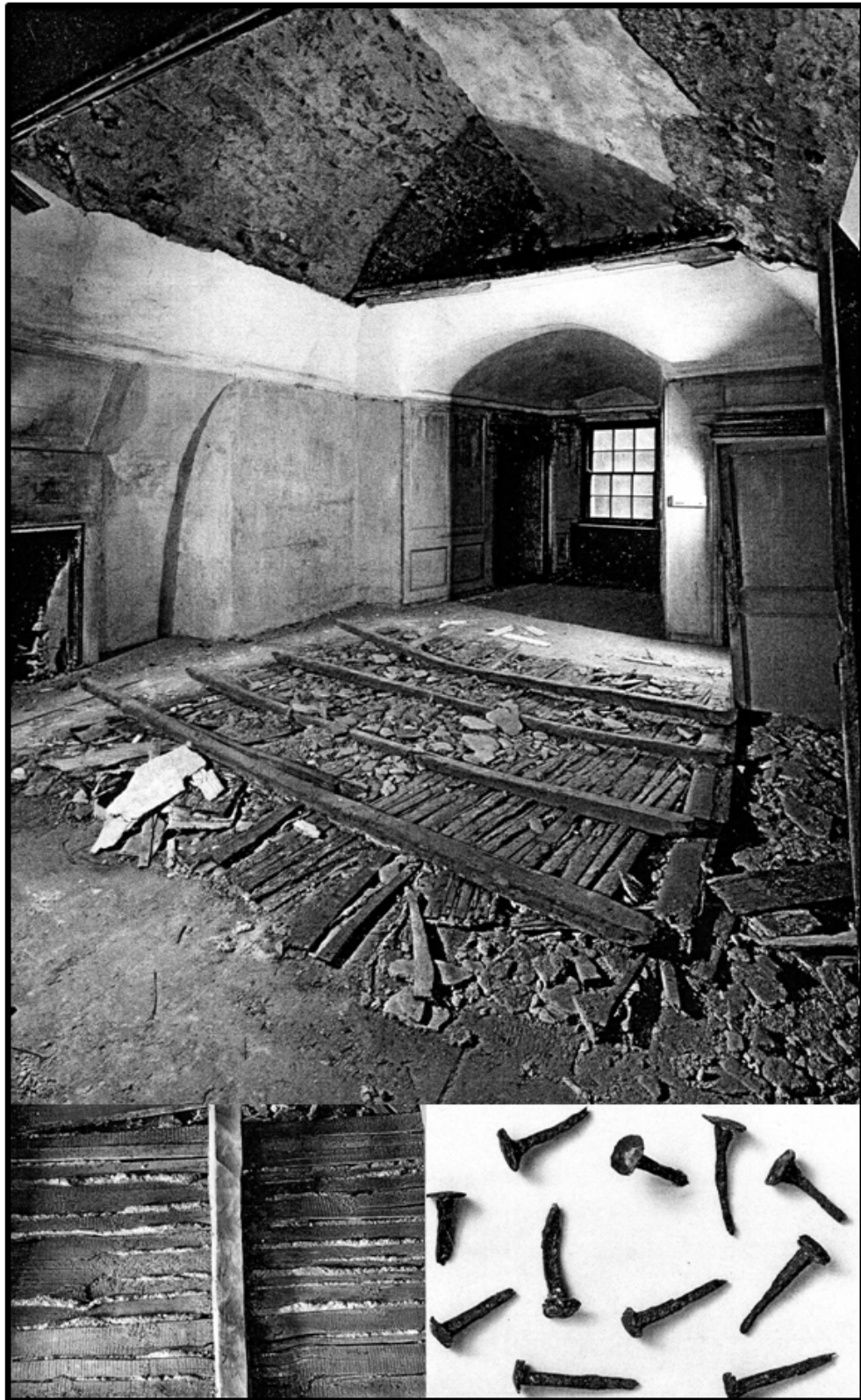


Figure 45: Neidpath Castle. The collapsed seventeenth century ceiling (second floor) originally inserted by Baine and which exposed the plaster ceiling construction (see inset) and the original vault above in 1982. The rivets shown are approximately 2.5cm⁸⁹ © RCAHMS

⁸⁹ Pers.comm. William Napier, National Trust for Scotland: these types of laths were formed by taking thinly sawn boards and splitting them with a knife or axe, but not along the entire length. The board was then pulled apart to form gaps to allow the plaster to grip.



Figure 46: Architrave at Neidpath Castle by James Baine 1668-1671. Photograph: author 2005.

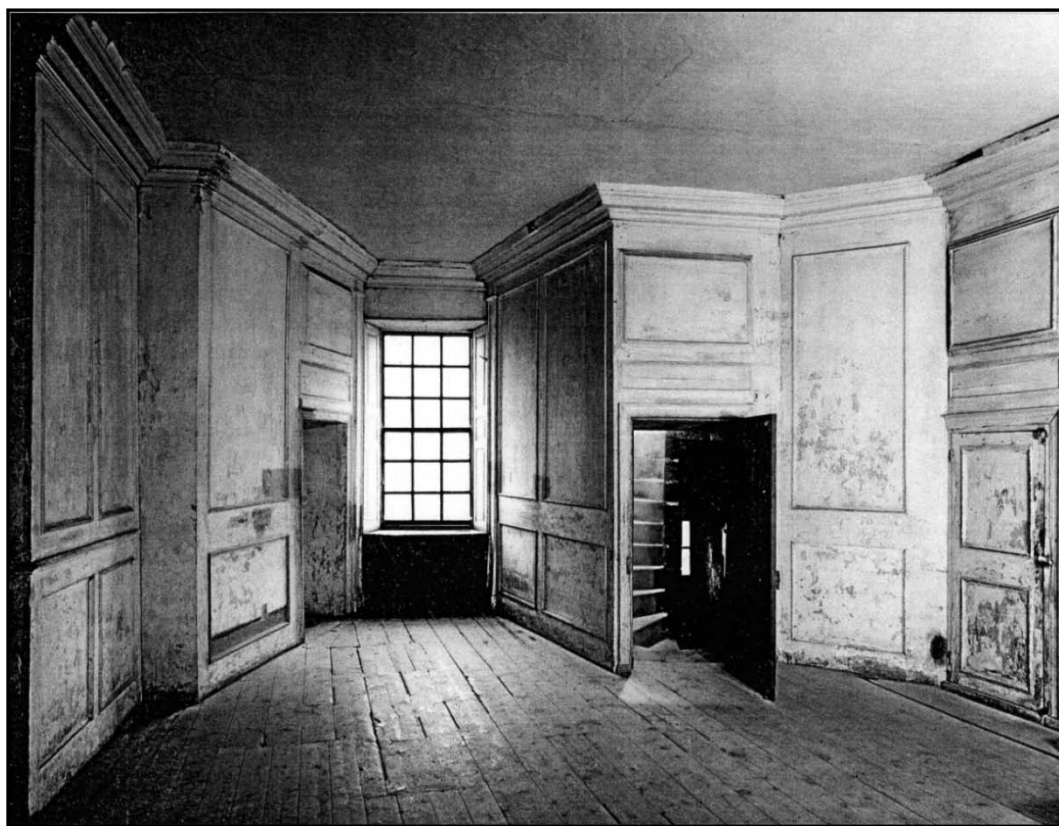


Figure 47: Neidpath Castle, seventeenth century panelling work by James Baine. © RCAHMS

At Ravelston, the house of Sir John Foulis, the only existing evidence for Baine's work is a brief mention in the accounts dated October 1680. This was for timber and workmanship costing £25, and corresponds with modernisation works carried out from 1679 to 1680 by Foulis.⁹⁰ Baine also supplied timber for repairs to the house at Rosneath in Argyll for Lady Lorne (daughter of the duchess of Lauderdale from her first marriage to Tollemache, and step-daughter to the duke of Lauderdale, who married the son of the Earl of Argyll). Her mother the Countess of Dysart appears to have overseen the payments for the repair work where Baine was recorded as having supplied 24 pieces of short wainscot and 24 pieces of six foot wainscot at a cost of £139. This represents the most westerly transaction undertaken by Baine and two carters were paid for bringing the 48 pieces of wainscot from Leith to Glasgow, from where it was transported onwards to Rosneath.⁹¹ There is no date for this transaction, but Archibald Campbell and Lady Lorne had married on March 12, 1678 and one would assume these building works, which appear to have been directed by his mother-in-law, probably took place soon after this date.

Baine supplied some of the timber required by the duke of Lauderdale for his extensive works at Thirlestane Castle from 1671 to 1672, but he was only one supplier amongst several other merchants and landowners; the Earl of Kincardine for example sent 54 great square joists at £27 from Culross. Baine was not involved with any of the workmanship at Thirlestane, for Lauderdale initially employed a Leith wright,⁹² later bringing in Dutch joiners and cabinet makers.⁹³ Baine's plastering skills were not required either, as the work was contracted to Thomas Alborn, who also worked at Holyrood. At Thirlestane, Alborn received £120,

...to plaister in handsome and neat plaine work...handsome and
fashionable cornish mullers in everie rounge thairroff...made choise
of be Sir William Bruce...⁹⁴

⁹⁰ A.W.C. Hallen (ed), 'Account book of Sir John Foulis of Ravelston, *Scottish History Society* Vol.16 (Edinburgh, 1893) p57; see p.7 for possible earlier reference to a Baine re: bringing coals rather than timber from Leith. Also Charles McKean, *The Scottish Chateau* p. 245-6.

⁹¹ NLS: MS975 ff127R-128v., with thanks to John Dunbar for bringing this document to my notice.

⁹² Dunbar, 'The Building-activities of the Duke and Duchess of Lauderdale, 1670-82', pp.206-208.

⁹³ Dunbar, 'Lowlanders in the Highlands: Dutch craftsmen in Restoration Scotland'.

⁹⁴ Dunbar, 'The Building-activities of the Duke and Duchess of Lauderdale, 1670-82', pp.206-208.

Baine was probably not available for undertaking work at Thirlestane, since he was at that time occupied at Panmure, Glamis and Castle Lyon, Neidpath, and Yester. However, his involvement with these building works would not have prevented him from providing timber, and he probably also supplied timber for Lauderdale's other Scottish properties of Lethington and Brunstane. In fact, it is very likely that Baine would have supplied timber to Lauderdale's extensive network of associates, colleagues and kin. Notably, whilst Lauderdale was Lord President of the Privy Council of Scotland from 1672 to 1680, all the Treasury Commissioners had properties that received either repairs or modifications, some being substantial.⁹⁵ One such example was Baine's work at Dunkeld for the Earl of Atholl (Lord Privy Seal 1672-1682), which resulted in a later dispute concerning Baine's standards of workmanship and Atholl's non-payment for the work executed.⁹⁶ Baine has also been identified as a supplier of timber to Sir William Bruce (Surveyor of the King's Works 1671-1678) for building works at his house of Balcaskie and also possibly Kinross House;⁹⁷ this seems very likely since Baine was working for Bruce at Holyrood. There are potentially many other buildings that could be associated with Baine through his patrons' family networks, and the geographical proximity of a number of properties. In particular, his long term working association at Panmure with the Maule family might have led to further contracts at Ethie and Kinnaird Castles, also in Angus.

During the 1670s, Ethie Castle was occupied by David Carnegie, (2nd Earl of Northesk d.1679), who married Lady Jean Maule (daughter of Patrick Maule, 1st Earl of Panmure) on 19 October 1637. By virtue of this association, Baine may have been employed at Ethie whilst working at either Panmure or Glamis during the 1670s. What is indisputable is that some of the surviving panelling work is of this date (Figure 48). Kinnaird Castle was owned by (his nephew) Sir David Carnegie, (1st Earl of Southesk 1575-1658), and may be a further candidate for work

⁹⁵ For more details of this and the financial advantages available to the Treasury Commissioners see Wemyss, 'A Study of Aspiration and Ambition'.

⁹⁶ See J. Murray, 7th Duke of Atholl, *Chronicles of the Families of Atholl & Tullibardine*, Vol.1, (Edinburgh, 1908) p.339, cited in Charles Wemyss, 'Some Aspects of Scottish country house construction in the post-restoration period: Patrick Smyth and the building of Methven Castle 1678-1681', M.Phil. diss., University of Dundee, 2002, p.42.

⁹⁷ Philip Fitzalan Howard, 'Balcaskie House, Fife, and the early architecture of Sir William Bruce', M.Litt. diss., University of St.Andrews, 1988; Walker, N.H., *Kinross House and its associations*, (1990).

executed by Baine. Carnegie's daughter, Lady Marjorie, married first William Halyburton of Pitcur and later Robert Arbuthnott, 1st Viscount of Arbuthnott. New plaster ceilings and panelling were installed at Arbuthnott during the 1680s,⁹⁸ and more recent research suggests that the later seventeenth century building works carried out there were probably far more extensive than Slade's assessment.⁹⁹ It is certainly plausible that Baine was involved with these works at Arbuthnott via his clients' kinship connections with patrons of his earlier work in Angus.



Figure 48: Seventeenth century panelling at Ethie Castle in Angus - a possible candidate for Baine's workmanship? Photograph: author 2007.

⁹⁸ H.G. Slade, 'Arbuthnott House, Kincardineshire,' in *PSAS* 110 (Edinburgh, 1979).

⁹⁹ Charles McKean and Ian Campbell, *Arbuthnott House*, unpublished report, August 2008.

Baine's links with his fellow brethren at Mary's Chapel would have formed a more obvious professional network of contacts and potential business partnerships. He would certainly have been familiar with all of the principal craftsmen working in the Edinburgh building trades. Some of the more prominent included Thomas Wilkie - mason and also deacon of Mary's Chapel in 1675, 1679 and 1680, who built Gallery House in Angus for Sir John Falconer of Balmakellie (Master of His Majesty's Mint) in 1678. Other associates included: Alexander Nisbet - mason and deacon in 1671, 1672, 1692, who worked with Baine at Panmure, Glamis and in Edinburgh;¹⁰⁰ Andrew Cassie, His Majesty's Master Slater and member of Mary's Chapel, with whom Baine raised money in partnership from the Incorporation of the Baxters of the Canongate in 1676;¹⁰¹ Charles Wilson, painter and burghess of Edinburgh, who worked at Panmure and Panmure's lodgings at Holyrood; James Smith, mason, architect and deacon of Mary's Chapel in 1681, who worked chiefly with William Bruce and married Robert Mylne's daughter; and finally Robert Mylne (His Majesty's Master Mason), an associate with whom Baine came into conflict with at Holyrood. Baine chose to decline a payment for workmanship and timber from Robert Mylne since he regarded himself as Mylne's equal and that Bruce as King's General Surveyor, was in sole charge of all building operations and payments.¹⁰² Mylne was nephew to John Mylne (His Majesty's Master of Works and architect of Panmure, Leslie and Wemyss d.1667), becoming His Majesty's Master of Works (1668) and mason deacon of Mary's Chapel in 1686 and 1687.¹⁰³ Kinship also played a role in Baine's associations with other craftsmen and in 1672 and 1688 Baine employed his two nephews John

¹⁰⁰ RD2/17

¹⁰¹ RD2/55

¹⁰² David Marshall, 'Notice of three Contracts betwixt Sir William Bruce of Balcaskie, His Majesty's Surveyor-General; Sr William Sharp of Stainiehill, His Majesty's Cash-keeper; and Robert Mylne, His Majesty's Master Mason, for the Reparation and Building of the Palace of Holyrood (1672-76); with Relative Letters, &c., lately Discovered in the Charter-room at Kinross House', in *PSAS* Vol. 14 (Edinburgh, 1879-1880).pp. 332-34.

¹⁰³ Edinburgh City Archives: SL34/1/1-3.

and Robert from Musselburgh as apprentices; his nephew Robert Baine worked alongside him at Brechin and possibly assumed control when Baine was absent.¹⁰⁴

Relations between the members of Mary's Chapel were not always positive and harmonious. In 1673 Andrew Forrester,¹⁰⁵ a bower (bow-maker) belonging to Mary's Chapel, brought a complaint to the Privy Council against Baine and others for assault. Forrester had gone to the house of Andrew Cassie in the Canongate where he was attacked by five men who were named as Baine's servants: James Laing, George Mount, James Kerr, Andrew Wright and John Hewitt. Forrester was badly injured and,

in so lamentable and pitifull a condition that he was caryed home as
deid to his oun house, where many weekes he lay languishing...¹⁰⁶

The charge was proven against Mount, Laing and Hewitt. Mount and Laing were first sent to the pillory and instructed to leave Edinburgh, never to return. Hewitt was imprisoned in the tolbooth where he remained until he too left town. No further information was recorded, no explanation was given as to why the assault took place, and Baine was not called to account for the actions of his servants in this criminal episode. The guilty protagonists are not listed as members of Mary's Chapel, but an Andrew Wright worked at Panmure in 1668 and at Glamis in the 1670s. He may have been an apprentice or journeyman to Baine, and if the same person he eventually became the estate wright for the earl of Strathmore during the 1680s, and a minor landowner 'Wright of Wrightsfield'.

¹⁰⁴ His brother John Baine (d.1697) was a merchant and wright in Musselburgh; see CC8/8/80 Edinburgh Commissary Court. James Baine was still described as *His Majesty's Wright* when he took on John Baine (the younger) as an apprentice in July 1672, however he is plain James Baine when he took on his second nephew Robert in March 1688; NAS GD45/18/1616/38. According to Bamford, Baine took on eight apprentices, however he listed two John Bains, one in 1665, and this maybe have been a misreading of John Purves who completed his essay piece in 1671, so would have been indentured c.1665.

¹⁰⁵ Also in 1673 Forrester is mentioned in a letter from Lauderdale to Bruce regarding an account of all his houses and the proposed building works at them. In 1681 Forrester was listed as the King's Master Bower, along with both Cassie and Baine; see, Mylne, *The Master Masons to the Crown of Scotland and their Works*, p.210

¹⁰⁶ Peter Hume Brown, *Register of the Privy Council of Scotland*, Series 3, Vol. IV: 1673-1676, (Tanner Ritchie Publishing and the University of St. Andrews, 2005) pp133-4.

CHAPTER 8: BAINE'S BANKRUPTCY

By the 1670s Baine was a successful man with access to capital and credit obtained through his business as a timber merchant. As an accomplished master wright and member of Mary's Chapel, he was directly connected to Edinburgh's elite of skilled and successful craftsmen, with whom he was able to form partnerships both for building projects and for raising capital in joint ventures.

It was probably his early success in these fields that had made him the favourite candidate for the position of His Majesty's Wright. By the time the works at Holyrood commenced c.1671, he had amassed a huge stock of timber worth £50,000 and 'ceased not to furnish what was needful, until that palace was completed.'¹ His central role at Holyrood and the other Crown works was essentially to supply suitable timber for the building works and provide sufficient men for wright and plaster work, but

Such was his zeal for the public, and earnest desire to carry on these works which were to the honour and security of the kingdom, that when there was not money in the treasury to buy materials necessary, he furnished all things so far as that his stock could reach...²

Baine's further success was exemplified by his employment as main contractor by members of the nobility. From 1668 he entered into a contract with the Earl of Panmure for the wright and plaster work at Panmure House. A year later in 1669, he was the main contractor at Glamis and Lyon for the Earl of Strathmore providing materials and men. A few years afterwards, he was still working for the Earl of Tweeddale at a number of his properties, providing timber and skills both as wright and plasterer. His responsibilities progressively expanded to supplying not only timber, but also to operating as a main contractor overseeing the payment and supervision of other trades. This included the provision of slates, iron work, furniture, copper globes and weather vanes, as well as overseeing mason, slate and smith work.

¹ RPS, 1695/5/219. Date accessed: 9 May 2008.

² RPS, 1695/5/219. Date accessed: 9 May 2008.

In 1688, Baine entered into several contracts with the fourth earl of Panmure wherein he was named as Master of Works, and operated as main contractor to oversee repairs and modifications at Brechin. His professional position may have developed further at Brechin where he, in effect, also appears to have assumed the role of architect.

However, by this time his financial circumstances had worsened dramatically, and in 1690 he was declared bankrupt and imprisoned by his creditors in the tolbooth of Edinburgh. In November 1694, he was imprisoned a second time,³ and in the same year dismissed from Brechin in humiliating circumstances.⁴ What had gone wrong?

The root cause may have been that Sir William Bruce was stripped of his status as Surveyor General in 1678, allegedly because the work at Holyrood was finished. However it actually had more to do with Lauderdale safeguarding his own interests and authority in Scotland.⁵ Once Bruce was dismissed from Holyrood, those associated with him at the building works subsequently suffered either professionally and /or financially too. This included both Baine and Robert Mylne, the latter still being owed £26,160 (£2,180 sterling) in 1699 for work he had undertaken at Holyrood and Edinburgh Castle during the 1670s.⁶

Baine's continued success as a main contractor was only sustainable if he had access to sufficient funds to continue trading, and like any businessman, he relied on his clients to pay punctually for materials and workmanship that he had supplied. If they failed to do this, Baine's creditworthiness would have diminished to a point where creditors would cease to have any confidence in his business, and he would no longer have been able to either supply the necessary materials or work force for building works. Thus, whereas the 1670s had been the peak period in Baine's career, the 1680s saw a dramatic reversal in his fortunes. Though at one time His Majesty's Master Wright, a wealthy timber merchant and main contractor for several prestigious building works for leading figures of the Scottish nobility, there is a recurring theme in the

³ NAS E28/583/1

⁴ Robert Chambers, *Domestic Annals of Scotland III: From the Revolution to the Rebellion of 1745*, (Edinburgh & London, 1858-1861), p29.

⁵ Wemyss, 'Aspiration and Ambition', pp.85-87.

⁶ Mylne, *The Master Masons to the Crown of Scotland*, p.233.

surviving record: namely money due to Baine for completed works but for which he never received payment.

During the 1660s, Baine had been able to lend money, but by the 1680s he now had to raise money to remain in business and fend off creditors. The Register of Deeds records that between 1677 and 1684, he raised £16,389 through bonds. The same records show he only received £3,745 in the same period.⁷ Prior to this, between 1673 and 1676, Baine had, apparently, received substantial payment authorisation – probably in the form of promissory notes - from Sir William Sharp amounting to approximately £140,000 (£11,670 sterling) for his workmanship at Holyrood.⁸ However, Baine's petitions to Parliament in the 1690s imply these payments were never honoured. In 1675, when the Treasury was allegedly suffering from a lack of funds, Baine supplemented the Crown's finances personally. He used payments received from three of his principal clients and others to finance the continuation of building works at Holyrood. In total he raised £33,000,⁹ which included £7,000 from Tweeddale,¹⁰ £12,000 from Panmure and £4,000 from Strathmore, plus £10,000 from his 'neighbours' in Edinburgh's High Street.¹¹

Baine, having raised money from these men for the continuation of building works at Holyrood, then continued to provide additional goods and services for the Crown at his own expense until according to his 1695 petition,

he not only spent his own fortune, but stood considerably in debt to others,
he never being as yet reimbursed by his majesty the sums given out by
him...¹²

In order to remain solvent, Baine raised further credit through bonds and as early as 1676 he entered into a joint agreement with Andrew Cassie (His Majesty's Slater) to raise 1000 merks (£667) from the baxters of the Canongate.¹³

⁷ See Appendix I: James Baine Register of Deeds Documents 1666-1694

⁸ E67/8/7 and E67/12/6/1-6

⁹ *RPS*, 1695/5/219. Date accessed: 9 May 2008.

¹⁰ To date only receipts totalling £2,500 for work by Baine have been located.

¹¹ Baine lived at Todrig's Wynd see RD3/58 p.745

¹² *RPS*, 1695/5/219. Date accessed: 9 May 2008.

¹³ RD2/55

In his many petitions to Parliament, Baine's principal grievance was not only the initial sum of £33,000 he had provided, but also the annual interest that had then been accumulating on other loans and bonds he had taken out during the intervening 20 years. His appeals mentioned the 'widows and orphans who had entrusted him with their whole stock, and were thereby then reduced to beggary.'¹⁴ While such claims are probably exaggerated, they should not be dismissed as hyperbole used to gain the sympathies of Parliament. Evidence in the Register of Deeds shows that during the 1680s, Baine did indeed enter into agreements for bonds of between 500 and 2000 merks (£1334) with, amongst others, orphans. This included 1000 merks borrowed from Anna and Joan Smart daughters of the deceased Andrew Smart burgess in 1680¹⁵, as well as 500 merks from Robert Cumming, skipper in Bo'ness dated 20 July 1680¹⁶ and 2000 merks borrowed from Thomas Burns [Burnet] writer in Edinburgh on behalf of his spouse Margaret Paterson dated 11 March 1681.¹⁷ All of these agreements carried penalties for non-payment, on average £100 for 1000 merks to be paid annually until the debt was honoured. In total, Baine ended up paying £27,500 annually in interest alone for all the loans he had taken out for the purpose of public works.

His initial imprisonment in July 1690 was the result of an action by Thomas Burnet, who had sought repayment of his loan to Baine with little success.¹⁸ By this point Baine had incurred debts of approximately £23,000 (Scots) and when the Lords of the Treasury considered his case they agreed that 'upwards of £2,000 sterling' *i.e.* £24,000 (Scots) was owed to him by the Crown. At the same time they 'recommended him to the Lords of Session for a suspension against his creditors...while the money due to him by the king were paid....' This decision was approved but no action was taken. The Lords of the Treasury then granted him £500, but as was

¹⁴ *RPS*, 1695/5/219. Date accessed: 9 May 2008.

¹⁵ RD4/50

¹⁶ RD2/59

¹⁷ RD3/58

¹⁸ Chambers, *Domestic Annals of Scotland III*: p29.

often the case, no actual funds materialised.¹⁹ His creditors patience finally ran out, Burnet pursued the repayment of his debt and Baine was imprisoned in the tolbooth.²⁰

The money owed to Baine by the Crown remained unpaid, despite several petitions to parliament resulting in positive recommendations in his favour.²¹ The Lords of the Treasury agreed that ‘all persons...be encouraged to carry on public works and advance money to the completing of them...’ and that if Baine was not compensated then future public works might be at risk from lack of public finance. In 1696 they agreed that a fund was required to reimburse him so that,

he may have wherewith to satisfy these poor and all other his creditors whose clamours and outcries against him cannot but be a great trouble to an honest and ingenuous spirit.²²

In total Baine’s unpaid accounts came to £80, 509 (£6,709 sterling). After 1690 he received £7,300 Scots, and a further recommendation in 1696 stated that Baine should receive, ‘...vacant stipends from time to time ... for his subsistence’ from the lords of his majesty’s treasury.²³

Baine’s applications for repayment of the money he was owed could not have come at a worse time. The 1690s were characterised by poor and failed harvests in 1695, 1696, 1697 and 1698, these resulted in perhaps 5% of the population starving to death.²⁴ The ill-fated Darien Ventures set off to establish a new colony in Panama in 1698 and 1699; it took much of the nation’s capital with it, practically bankrupting the Scottish economy in the process. Nine petitions in total from Baine were recorded in the Exchequer records between 1694 and 1704. From these, Baine received fifteen payments totalling £5,916 or £494 sterling.²⁵ Parliament agreed that the full amount owed to Baine by the public purse equalled £81,769²⁶ the annual

¹⁹ *RPS*, 1695/5/219 and 1696/9/184. Date accessed: 9 May 2008.

²⁰ Chambers, *Domestic Annals of Scotland III*: p29.

²¹ *RPS*, 1695/5/219; 1696/9/184; 1704/7/124. Date accessed: 9 May 2008.

²² *RPS*, 1696/9/184. Date accessed: 9 May 2008.

²³ *RPS*, 1696/9/184. Date accessed: 9 May 2008.

²⁴ Michael Lynch, *Scotland: A New History* (Pimlico, 1992) p.306.

²⁵ NAS E28/583 – with thanks to Michael Pearce for bringing these to my notice. The records accessed from the *RPS* appear to correspond in part with these nine petitions from Baine amongst the Exchequer vouchers.

²⁶ NAS E28/583/19;22

interest for this sum being nearly £5,000; however over a period of ten years Baine received little more than one year's interest.²⁷

In 1698, he was once again threatened with imprisonment by his creditors who were no longer reassured by Treasury precepts.²⁸ By 1701 he was 'grievously tormented with the gravel (kidney stones) ...' but could not afford 'phisicians or Apothecaries for their attendance and drugs....'²⁹ His 1704 petition stated that,

...his creditors have been these twenty years in possession of all that he has and that for these very debts which he contracted for the public...
...incapacitated from selling timber as he was wont and also from following his employment as wright and has been under this inability of doing anything for himself these eighteen years bygone.³⁰

This petition had a little more success, and it was agreed that until there was more money available Baine should receive quarterly payments amounting to £1,200 Scots annually. The last receipt was for a payment of £300 paid on 5 September 1704, signed by his daughter Elizabeth Baine.³¹ This was not the end of Baine's campaign, however, and following his death in 1704, his brother William continued to present claims to Parliament, albeit unsuccessfully.³²

The decline of Baine's career in the 1680s corresponds with his lack of finance and loss of his timber stocks. There is little or no evidence of his involvement in any major building works in this period, apart from some finishing work at Panmure in 1685-86, until he started work at Brechin in 1688.

The records show that although Baine was less involved with timber and wright work during the 1680s,³³ he may have been occupied with his role as tutor to George Baine's son, also James Baine (b.1673). The Register of Deeds illustrate his direct involvement with the administration of his pupil's estate and affairs, a duty he shared with the younger James Baine's

²⁷ NAS E28/583/15

²⁸ NAS E28/583/11

²⁹ NAS E28/583/22

³⁰ RPS,1704/7/124. Date accessed: 9 May 2008.

³¹ NAS E28/583/29

³² RPS,A1706/10/64. Date accessed: 30 March 2009.

³³ Bamford, *The Dictionary of Edinburgh Wrights and Furniture makers* p.41. According to Bamford he did not take on any apprentices between 1678 and 1688 when he indentured his own nephew Robert in March 1688.

³³ NAS GD28/2102

brother-in-law Andrew Balfour, writer to the Signet (and husband of his pupil's deceased half sister Elizabeth). Transactions by Baine on behalf of his ward included a loan to the Earl of Mar for £486 09 10 Scots in 17 September 1682, and the sale of the younger James Baine's share in a ship the *George* of Burntisland (120 tons).³⁴ Baine probably benefited financially from these and other similar profitable transactions whilst managing his pupil's finances, allowing him to remain solvent during the 1680s. When his pupil came of age in 1694, Baine was discharged of his duties as tutor, 'who kindly and faithfully advised with Andrew Balfour and took care of his affairs...' indicating Baine had carried out his responsibilities in a suitably honourable manner.³⁵ However, this coincided with Baine's dismissal from Brechin and second term of imprisonment in the tolbooth of Edinburgh, signalling that his role as tutor may have been essential for the continuation of his own business interests.

It was not only for his work at Holyrood that Baine had not received full payment. In October 1693, controversy arose regarding Baine's workmanship at Dunkeld for the Duke of Atholl. Once again Baine had not been paid for his work, and his claim went to arbitration. His representative was Mr William Baine, minister of Torphichen (Baine's brother), whereas Atholl chose Thomas Graeme of Balgowan and David Smythe (brother to Patrick Smythe of Methven). No records survive of the final ruling, and we can only surmise that Baine did not receive any payment.³⁶ In 1694, Baine presented a memorandum of work undertaken for Strathmore at Glamis and Castle Lyon dating back to 1672 for £17,000, which he was still owed. Again, it is unlikely he received any payments for this work. Baine's work at Brechin for the fourth earl of Panmure was his final commission, ending in disgrace when Tobias Bauchop - mason and architect to the Earl of Mar – was asked to assess his work at Brechin. Bauchop was highly critical of both the workmanship and the materials used. Baine's dismissal must have been the final blow for the previously successful and highly respected King's Master Wright. It was

³⁴ RD4/56/1 and Admiralty Court Records AC7/5, Edinburgh 20 January 1680.

³⁵ RD4/75

³⁶ J. Murray, 7th Duke of Atholl (ed.), *Chronicles of the Families of Atholl and Tullibardine* (Edinburgh, 1908), pp.338-339.

following this incident that Baine began to seek recompense from Parliament in earnest, and his final years were marked by imprisonment, poverty and chronic illness.

Conclusion and Analysis

From 1669 onwards the Incorporation of Wrights and Masons of Edinburgh at Mary's Chapel experienced a large increase in the numbers of master wrights. Wrights dominated the membership of Mary's Chapel during the entire period examined, and the trade represented roughly 50% on average of the entire membership. Their increasing individual numbers implies a specific increase in demand for the skills of woodworkers, and an indication that they were probably becoming more influential not only in the running of Mary's Chapel, but also within the burgh. The rise in demand for wrights also corresponded with the increasing use of timber in building construction. By 1695, recognition of the wrights' increased influence and authority was indicated when the wrights' deacon, William Scott together with John Hislop (a former apprentice of Baine's), persuaded Parliament to permit them to build a wind driven sawmill on the shore at Leith.

Baine's rapid rise to His Majesty's Plasterer by 1661 could be due to family connections with George Baine, merchant and John Baine of Pitcairlie Writer, the witness to some of the building contracts at Holyrood.³⁷ George Baine's involvement with the timber trade in Edinburgh may have been the reason for James Baine taking his apprenticeship there rather than in his home town of Musselburgh. Perhaps he helped him to embark on his career not only as a wright, but also as a timber merchant by providing capital and introducing him to the Ross's of Invercharron and Balnagown for timber supplies. Following George Baine's death in 1676, Baine was assigned as tutor to his three year old son and administrator of his inherited property and assets, a further indication of a close, almost certainly familial, association between the two men.

³⁷Mylne, *Master Masons to the Crown*, pp. 192-194.

James Baine's early success was quite exceptional. He was evidently both a skilled craftsman and a wealthy entrepreneur who accumulated a valuable stockpile of timber. Yet his purchase of foreign timber is poorly documented and inconclusive. Where the country of origin was recorded, the timber came from Norway as would be expected, but Baine also bought significant quantities of domestic timber from Ross of Balnagown, probably when timber supplies from abroad had become less accessible.

By combining the roles of master wright and timber merchant, Baine implemented an early form of vertical forward integration at least a century before it is thought to have existed. By quickly establishing a valuable stockpile of timber, he was in a position to exploit his skills as a master wright, resulting in a more efficiently run business, and he probably dominated the timber market in Edinburgh (and Leith). If the £50,000 estimate of his timber stocks was accurate, then acquiring his services for the Crown works must have represented a major economic achievement for Lauderdale and the Treasury Commissioners. Baine undoubtedly hoped he would subsequently reap greater rewards for his loyalty and dedication to duty. This was not to be the case, and his involvement at Holyrood undermined his earlier success and accumulation of wealth.

His career peaked in the late 1670s, when he was involved with numerous building projects for members of the Scottish nobility. Most were undertaken either for Treasury Commissioners or other high ranking officials *e.g.* privy councillors. Today, the only surviving documented material evidence of Baine's wright work exists at Neidpath Castle, Peebles: plaster and wright work undertaken for the earl of Tweeddale. At Panmure, Glamis and Brechin, Baine was employed not only for wright and plaster works, but he was also engaged to varying degrees as a principal contractor and master of works in charge of other building trades, supplying timber and other building materials.

Baine's work apparently dried up after the 1680s perhaps because of his association with Sir William Bruce who was dismissed from his appointment at Holyrood. After this, the only known work that Baine was involved with was finishing work at Panmure in 1685 and at

Brechin from 1688 to 1694. Both belonged to the earls of Panmure who had been steadfast patrons of Baine since his first contract with the second earl of Panmure in 1668. Baine's bankruptcy in the 1690s was the result of his accumulated debts, and the reluctance of Parliament to honour its agreement to pay £81,000 owed to him.

PART THREE

JAMES BAINE:

PRINCIPAL BUILDING WORKS

1668-1694

INTRODUCTION

The three principal buildings with which James Baine was occupied during his long career were Panmure, Glamis and Brechin, all in Angus. The archive material relating to Baine's employment at each of the houses includes contracts, accounts, and letters, all of which permit in-depth studies of the buildings, their development and the type of organisation implemented to complete them. Baine's work at these houses covered the three decades from the 1660s to 1690s, a lengthy period that vividly illustrated his decline from elite craftsman to imprisonment for bankruptcy. The houses belonged to the earls of Panmure (Panmure and Brechin) and the earl of Strathmore (Glamis). The Panmures were occupied with re-affirming the family's ancient paternal seat at their Panmure estate in Angus. When Panmure House was completed in the 1680s, the fourth earl of Panmure then turned his building aspirations towards carrying out improvements at the family's 'castle' at Brechin. His father, the second earl of Panmure, had been uncle and tutor to the third earl of Strathmore¹ and whilst Panmure was still being built, Strathmore, perhaps influenced by his uncle, started work at two of his properties, Castle Lyon and Glamis where he embarked on the extensive re-development and restoration of the family's estate.

All three buildings were/are located within relatively easy reach of Dundee, Scotland's second busiest port at the time and where both families received Norwegian timber for their building works. Baine also provided timber from his own yard at Leith. The timber requirements for all three houses will be analysed, to determine the principal types and cuts of timber used for different purposes *i.e.* structural elements such as roofing, and flooring; finishing work, and furniture. The evidence will be examined to determine whether any pre-shaped timbers were ordered for these buildings, and also whether any cutting and preparation of timber took place on site.

¹ His mother, Elizabeth Maule, was the second earl of Panmure's sister.

At Mary's Chapel in Edinburgh, where Baine had served his apprenticeship, the growing numbers of master wrights belonging to the incorporation gave an indication of their rising power and influence amongst the other building trades. As wrights became responsible for more timber work in buildings, did wrights also gain more influence in the actual building process? The documentary evidence from the Dalhousie (Panmure) and Strathmore Muniments presents the opportunity to examine whether this was the case for Baine as an individual wright who then operated as a main contractor. His changing role and responsibilities at each of the houses will be compared to determine changes in his authority within the organisation and implementation of the three building projects. Several aspects of his working practices will be examined to reveal how efficient and honest he was at accounting, how capable he was as a main contractor, whether he employed other trades directly, and whether his skills as a master wright were sufficient for him to take on the role of designer.

CHAPTER 9: PANMURE HOUSE, ANGUS

Panbryde ... wherein stands the house of Panmure, new built, and as is thought by many, except Halyruidhouse, the best house in the kingdome of Scotland, with delicate gardens, with high stone walls, extraordinaire much planting, young and old; many great parks about the new and old house; with a great deal of planting about the old house; brave hay meadows well ditched and hedged; and , in a word, is a most excellent, sweet, delicate place.

John Ochterlony, *Account of the Shire of Forfar circa 1682*

The building of Panmure House was the earliest of Baine's major building works. There is evidence that Panmure incorporated an older property,² and an examination of the building itself would have provided a great deal of additional evidence, but unfortunately Panmure was largely demolished in 1955 at a time when many of Scotland's great houses were lost. All that remains today is the south stable block, joined to parts of the former kitchen court, both of which were modified by architect David Bryce in 1852.³ Although impossible to study the building to verify descriptions of building instructions and accounts found in surviving documents, or to use dendrochronology to determine the provenance and age of timbers, some exterior engravings and photographs exist from the nineteenth century onwards. These depict the house before and after it had undergone the radical alterations and additions executed by Bryce in the nineteenth century (Figures 49-52). The Royal Commission for Ancient and Historic Monuments of Scotland (RCAHMS) also has a collection of black and white interior photographs taken prior to the building's destruction. These show some of the plaster and wright works executed by Baine, including the main staircase.

² McKean, *Scottish Chateau*, p. 252.

³ Ian Gow, *Scotland's Lost Houses*, (London, 2006), see Charles McKean's comment p.54.

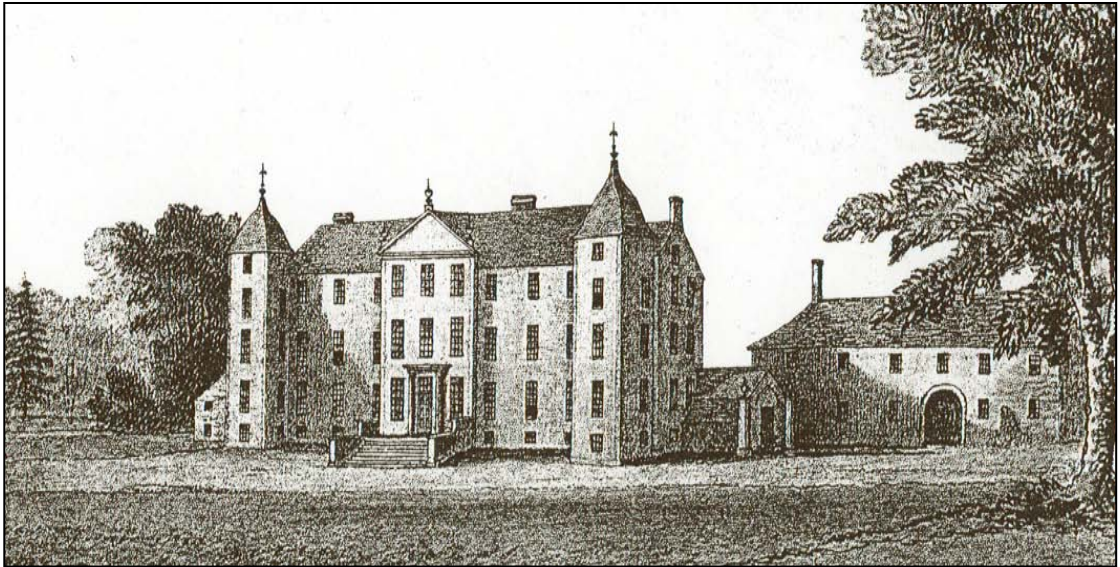


Figure 49: An engraving in the *Registrum de Panmure* published in 1874 and described as “Panmure House From a Sketch in the end of the last Century”. It shows that an additional storey with a pediment was added to the west front of the house prior to the nineteenth century additions made by Bryce.⁴



Figure 50: A similar image of Panmure House showing the north and west front, signed D. McKenzie and G. Cumming, published in *Forfarshire Illustrated*, in 1843.⁵ © SCRAN

⁴Harry Maule, [John Stuart, (ed.)], *Registrum de Panmure* (Edinburgh, 1874), cxlviii.

⁵ File: 07170719 University of Dundee Archive, www.scran.ac.uk 19.12.2003.



Figure 51: East front of Panmure c.1955 showing the modifications and additions by Bryce in 1852 when it became the main entrance to the house. ©RCAHMS



Figure 52: The west front of Panmure after 1852. © Dundee Central Library

Fortunately, detailed drawings of Panmure can also be found in William Adam's *Vitruvius Scoticus* (Figures 53 and 54).⁶ Although not published until 1812, Adam started collecting work for this publication as early as 1726 and so provides us with the most accurate representation of the house as originally built. These plans clearly point to an existing building incorporated into the new house at Panmure.⁷ A study of the basement and first floor storeys show distinctly thicker walls in the central and southern parts of the building (Figure 54). This is often indicative of a newer building being built over the remains of an existing one, as was also

⁶ William Adam, *Vitruvius Scoticus*, James Simpson (ed), (Edinburgh, 1980) Plates 129, 130 and 131. Files: 01340323, 01340324 and 01340325 University of Strathclyde Archive, www.scran.ac.uk 19.12.2003

⁷ McKean, *Scottish Chateau*, p.252.

the case at Brechin Castle. The question is, which building was modified and why did the family apparently abandon their ancient paternal seat of Panmure Castle?⁸

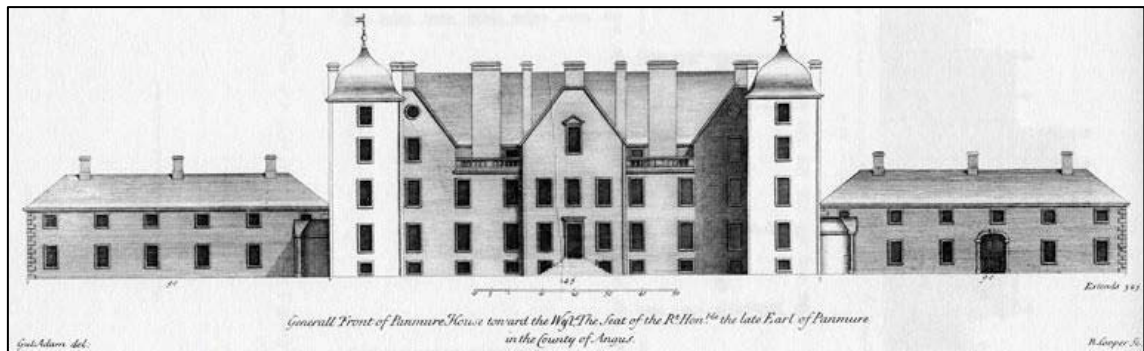


Figure 53: Panmure House as portrayed in *Vitruvius Scoticus* by William Adam. The kitchen court and women's court added in the 1690s are also shown. © SCRAN.

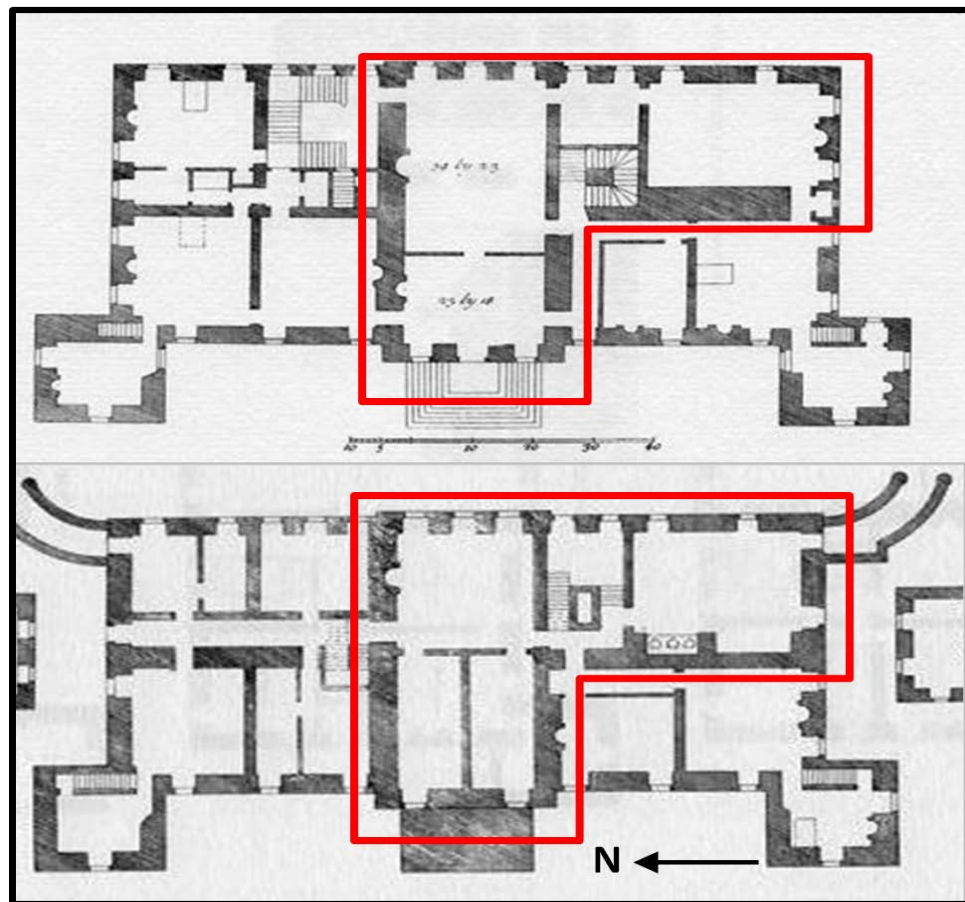


Figure 54: Basement storey and first storey of Panmure House adapted from *Vitruvius Scoticus* by William Adam, highlighting the areas with thicker walls. © SCRAN.

The initial idea for building a new house at Panmure was mooted by the first earl, Patrick Maule (1585-1661). He had been a gentleman of the bed-chamber to James VI and

⁸ Gow, *Scotland's Lost Houses*, p.53.

Charles I who appointed him, ‘keeper of the park and palace of Eltham (in Kent) and High Sheriff in Angus’. In March 1632, he received a charter for the Barony of Dounie, followed by Panmure in December of the same year. In October 1634 he also received the lordship of Brechin and Navar, plus further lands and baronies at later dates. During the 1640s, he purchased from the Earl of Dysart the Lordship and superiority of the Abbey of Arbroath, which included patronage of 33 parish churches.⁹ He was then created the first earl of Panmure, Lord Brechin and Navar on the 3rd August 1646.¹⁰

Prior to this elevated status, the Maule family had already had a long association with the lands at Panmure, and it was here that the family’s ancient paternal seat of Panmure Castle was located. According to A.H. Millar, based upon a detailed account of the castle written by Robert Maule in the early seventeenth century, the castle was probably built by Sir Peter Maule around 1224. Though many of the buildings had become ruinous, a new hall and round tower, built on the north side of the castle in the early sixteenth century, were believed to have remained habitable until the mid-seventeenth century.¹¹

An agreement between the future Earl Patrick and Andrew Drummond (minister of Panbride) dated July 1619, however, seems to indicate that the family no longer used the castle as their main residence when in Angus, where *Bauishen* was named instead.¹² This place name appeared in various guises in earlier connections with the Maules and in parts of the Chartulary of Arbroath where several forms - *Ballishane*, *Bawischen* and *Bawishen* – are written. According to the *Registrum de Panmure*, in 1497 the lands of *Balyshan* had been ‘conveyed by Sir Thomas Maule to his grandson and heir’.¹³ In 1532 Robert Maule and his wife Elizabeth Mercer obtained a 19 year lease of the tithe sheaves of the Mains of Panmure, Pitlivie and *Ballischane* from the Abbot of Arbroath. Letters dating 1640 are written by Patrick Maule from

⁹ Central Library Dundee, The Lamb Collection No. 2242, *Antiquarian Gleanings, Panmure House and vicinity*, p.3.

¹⁰ Harry Maule, *Registrum*, p.327. Although, according to Blaeu’s Atlas of Scotland (1654), Patrick Maule purchased the Barony from the Earl of Mar, pp.84-85.

¹¹ A.H.Millar, *The Historical Castles and Mansions of Scotland: Perthshire and Forfarshire*, (Paisley, 1890a) pp.278-84.

¹² ‘The Early History of Panmure House’ in the *Dundee Advertiser*, March 19, 1872, p.2.

¹³ Harry Maule, *Registrum*, p.260.

the same place, which implies that he resided here both before and following his being made earl. Further evidence suggests that there were extensive lands being farmed by tenants here. James Petrie in *Bawishen* paid a portion of the minister's stipend "in victual" in 1631 and Andrew Ramsay was recorded living at the Cotton of *Bauischen* in 1643.¹⁴

It would have been unusual for a family to completely abandon their ancient paternal seat and an examination of Timothy Pont's map of *Lower Angus and Perthshire east of the Tay* dated from 1583 to 1596 shows the house of *Boishon* (Figure 55) was located only a short distance north of Panmure Castle. Thus a move to Boishon in the early 1600s – a property already associated with the Maules – would not have meant the abandonment of the ancient paternal seat. It was here at Boishon that Patrick the first earl began preparations for building his new house within the locality known as Panmure which extended from the castle in the south to Gildy in the north.

In 1648 Patrick Maule purchased the rights of various leaseholders at Boishon. One of these was a John Pitire, who occupied two parts of the land. He agreed to "flitt and remove his wife, bairnes, servants, famillie, gudes and geir" at Whitsunday of the same year, from the houses and lands in his occupation at *Ballishane*.¹⁵ In April, May and July of 1649 David Masterton the King's glazier was employed to carry out improvements to the windows at Brechin and *Ballishine*. The bill for £130 13 02 included payment for old and new glass, renewing the fittings *i.e.* the latches and linings (shutters/frames?) for eight windows in "the old house of *Balashion*".¹⁶ His aspirations for building a house that was appropriate to his recently elevated status at the site of the "maner place of *Bolishen*," however, would not be realised during his lifetime.¹⁷

¹⁴, 'The Early History of Panmure House' in the *Dundee Advertiser*, see also extracts in Robert S. Mylne, *The Master Masons to the Crown of Scotland and their Works* (Edinburgh, 1893).

¹⁵ NAS GD45/18/283 and mentioned by A.J. Warden, *Angus or Forfarshire, the Land and People, Descriptive and Historical*, Vol. V (Dundee, 1885) p.65.

¹⁶ NAS GD45/18/673, notebook of David Mastertoun - glazier to the king.

¹⁷ RS35/1/325



Figure 55: Timothy Pont's map of Lower Angus and Perthshire shows Boishon just north of Panmure and Pitlivie c. 1590. It would seem that at the time when Pont recorded this area of Angus, Panmure Castle was still in a habitable condition. © National Library of Scotland.

Patrick Maule's loyalty to his sovereign meant the family became directly involved with the troubles of the following decades. Both the earl and his second son Henry were fined in 1654 by Cromwell's Act of Grace and Pardon for their loyalty to their king, Charles I. The first earl was fined £10,000 sterling and his son Henry was fined £2,500 (later reduced to £4,000 and £1,000 respectively).¹⁸ Consequently, when the first earl died in 1661 he had not made any further progress on his new house. He had, however, directed his son and successors to erect a new mansion at *Boishan* and it was George, the second earl of Panmure who carried out his father's earlier intentions.

The earliest depiction of the new house can be found on Robert Edward's map of Angus from ca. 1678 (Figure 56). When compared with Timothy Pont's map from ca. 1590 we can see the location of the new house was placed, fairly accurately, at Boishon. Edward was the minister at nearby Murroes and had a long association with the Maules, his wife Jean Johnston being

¹⁸ John Caesar, 'The Story of Panmure House', in the *Broughty Ferry Guide & Carnoustie Gazette*, March – April, 1955, and The Lamb Collection No. 2242, *Antiquarian Gleanings, Panmure House and vicinity*, p.3.

Robert Edward's familiarity with the area suggests that his map would be fairly accurate and he completely re-surveyed the area for this commission.²¹ A comparison with modern Ordnance Survey maps and aerial photography supports this too. By rebuilding on a neighbouring site the family's connection with both the old manor house and the castle of Panmure was reinforced and linked the new house of Panmure with their ancient paternal seat.



¹⁹ J.Lowrey, "A Man of Excellent Parts" Alexander Edward: Minister, Architect, Jacobite 1651-1708 (St.Andrews, 1987)p.3.

²⁰ Robert Edward, ca. 1616-1696, *Angusia Provincia Scotiae sive The Shire of Angus*, (Amsterdam, 1678) p.14.

²¹ Lowrey, "A *Man of Excellent Parts*" p.3.

The first written evidence directly concerning the building at Panmure is a draft letter dated 1666 addressed to "...a person to be in charge of the building of Panmure House". This document outlined several suggestions concerning the location and nature of the kitchens put forward by the Earl of Panmure's wife, Lady Jean Campbell, (eldest daughter of John Earl of Loudon, the Lord High Chancellor of Scotland),

...my wife has a strong inclina[tion] to have a storie of the house halfe under ground where she would have the kitchen...and a latter meat hall and some chambers for the servants to lye in and sellars if you can find a possibilitie to gette this done with out under water I think it would be werie commodious for by that means the low hall shall be free of any smell from the kitchen and wee and our children may have commodious lodging upon one flower without the trouble of goeing up as many stairs...²²

The proposal for a semi-subterranean kitchen basement was a radical suggestion that pre-dated similar basements at Dunkeld (1676) and Moncrieffe (1679).²³ An additional feature at Panmure was the use of the 'double-pile' format, previously only used at Culross Abbey House (1608).²⁴ The internal layout of Panmure has been compared with that of Charlton in Greenwich (1607-12), which also has a semi-subterranean basement, whereas externally Panmure has been compared with Blickling in Norfolk.²⁵ The influence of these buildings in the design at Panmure probably originated with Patrick, the first earl of Panmure who had spent many years in England as a gentleman of the bed chamber to both James VI and Charles I. He was also acquainted with English courtiers including Adam Newton, tutor to Prince Henry and builder of Charlton. Patrick then directed his son George to erect the new mansion that "he had designed"²⁶ implying that there may already have been some initial plans drawn up by the first earl.

The draft letter was probably intended for John Mylne, the King's Master Mason, and it suggested April as suitable for the arrival of masons on site, which coincides with the contract

²² NAS GD45/18/623

²³ Charles Wemyss, 'Some Aspects of Scottish country house construction in the post-restoration period. Patrick Smyth and the building of Methven Castle 1678-1681', M.Phil. dissertation, University of Dundee, 2002, pp.31-33.

²⁴ Ibid., p.32.

²⁵ Ibid., p.33.

²⁶ Harry Maule, cxlviii.

addressed to Mylne dated “the last day of February 1666”. In the contract Mylne agreed, “...to erect and build of guid and sufficient plain ston work...” for Panmure,

...his intended house at Boleschen in Angus according to the maner forme and dimensions of the said structure and edifice designed and set down by the said John Milne in draughts and agreed to by the said noble Earle...the said John Milne obleigges himselfe to enter to work betuixt and the first tuesday of April nixt...²⁷

This not only confirms the site location of Boishon, but also that John Mylne was the architect responsible for the final plans and drawings of the new house. The contract stated that Mylne was to be present at the laying of the foundations and at the beginning of each subsequent storey. If, during his absence from the site, the Earl of Panmure changed his mind with regard to the placing of doors, windows or chimneys, Mylne’s appointed deputy was to follow the “said noble Earles order and so to evite [avoid] all misunderstanding either in the men or in the worke or the forme therof...” Mylne was also required to give directions not only to the masons but also the “maner and forme” of the ironwork, wright work, slate work, glass work, plumbing work and plastering; indeed he was to be responsible for whatever was necessary for the completion of the building.

As part of the contract Mylne appointed a deputy, “...ane sufficient qualified able masson...” responsible for directing those under him and “the said master Oversier” was in addition to his wages to have “bed and boord in his Lordships house...”²⁸ He appointed Alexander Nisbet, master mason and burgess of Edinburgh to this role. It is unclear which house was being referred to here for his bed and board. It is likely that the house at Boishon plus any ancillary buildings would have been dismantled to provide materials and make way for the new house of Panmure, and in May 1666 there was a reference to “...taking down slates off the old house above the gate...”,²⁹ (although according to one tradition *Bowshen* was not dismantled

²⁷ NAS GD45/18/566-1, see also a full description of the mason contracts in R.S. Mylne, *The Master Masons to the Crown of Scotland and their Works* p.153-156.

²⁸ NAS GD45/18/566-1

²⁹ NAS GD45/18/27/128

until the early eighteenth century when new stables were built by the fourth Earl of Panmure³⁰). There may have been suitable accommodation at the old castle or one of the family's other properties in the surrounding area and Nisbet probably boarded with the family at Ardestie, a few miles to the south-west of Boishon, where there was a "suitable mansion house".³¹ Ardestie had been the second earl's residence; he lived here following his marriage to Lady Jean Campbell in 1645. Their children, the future third (George b.1650) and fourth (Patrick b.1658) earls of Panmure were both born at Ardestie, as was their brother Henry Maule of Kelly (b.1659).³² On the death of the second earl George in 1671, his widow retired from Panmure to live at Ardestie until 1703.

The new house at Panmure was built in the main from 1666 to 1670 for George Maule, the second earl of Panmure.³³ The initial contract with John Mylne demonstrates that he was responsible as master of works for the final design and specification of the work being carried out for Panmure. Following his death in 1667, Mylne's deputy Alexander Nisbet, took over responsibility for the masons' work until its completion in September 1670. A separate contract was also drawn up with James Baine - master wright, burgess of Edinburgh and timber merchant – in 1668 to carry out both the wright and plaster work.

During the 1690s, the fourth earl, Patrick Maule also employed the Bauchop brothers Tobias and John to build the two additional courts flanking the main house - the woman's court and the kitchen court.³⁴ However, it is the contracts with Baine, plus the additional books of building accounts and discharges, which provide details of the organisation of what was essentially a new building project, albeit over an earlier, largely modified building. They are also invaluable for detailing the acquisition of all the necessary building materials, presenting a chronology of the building process itself. Of particular interest is the timber required for such a

³⁰ Miller, *Historical castles and mansions* p.292.

³¹ *The Early History of Panmure House* in the Dundee Advertiser, Tuesday March 26 1872, p.2.

³² A.J.Warden, *Angus or Forfarshire, the Land and People, Descriptive and Historical*, Vol. 5 (Dundee, 1885). pp.413-429.

³³ NAS GD45/18/566/1-4

³⁴ NAS GD45/18/614-1-14

building project, listed with quantities, types of cut and costs, some of which came in shipments procured directly from Norway.

An outline and timetable of the different building phases can be re-constructed from discharges and contracts agreed with Mylne, Nisbet and Baine (Figure 57). By the end of February 1666 the general plan, dimensions and layout of the new house had been discussed, drawn up and agreed upon by the Earl of Panmure and John Mylne.

BUILDING TIMETABLE: PANMURE						
Year	Masons work	Wright work	Slating	Glazing	Plaster work	Painting
1666						
1667						
1668		Roofing/flooring				
1669		Doors/windows/St				
1670						
1671		Stables				
1672	West gates					
1673						
1674						
1675						
1685		Fitting out				
1686						

Figure 57: A breakdown of the different phases of building work undertaken by the different building trades at Panmure between 1666 and 1686, based on surviving contracts and accounts. The main house was largely complete by 1670, indicated by the dotted line.

Essentially Panmure was to be built as a symmetrical eleven-bay house, with bastions at the south-west and north-west corners, and viewing platforms facing west at the third storey. The approximate dimensions were 140 feet x 60 feet, with an estimated height of 58 feet. It was constructed using the ‘double pile’ format, and integrated Lady Jean’s suggestion making Panmure the first Scottish great house to incorporate a semi-subterranean basement.³⁵ The formal route through the house was vertical rather than horizontal and from the entrance visitors would have gone through a transverse hall via the great staircase to the principal floor above. This was very similar to Leslie in Fife, also designed by Mylne for the Earl of Rothes c.1666.

³⁵ Pers. Comm. Charles McKean: recent evidence indicates Panmure had a cross service corridor which appeared later in Kinross.

The masons duly arrived on the first Tuesday of April 1666, when John Mylne was present at the “...foundacione where everything may be spoke of that concerns the first storie...”, and thereafter Mylne was to “...be present at the beginning of every storey as the building advances in height....”³⁶ His deputy, Alexander Nisbet, was *in situ* on a daily basis to oversee the work and make any adjustments requested by the earl. John Mylne’s death in December 1667 meant that new contracts had to be drawn up. His successor was Nisbet his deputy; someone already familiar with the building from the start of the works. What had been achieved in these two years under John Mylne’s direction?

The *Volume of Charges* indicate that there had been a maximum of 17 masons working at any one time during 1666, with up to 29 men in 1667. Two wrights, John Lyall and John Johnston had been employed for 28 days in 1666. A total of 80 double trees, twelve great trees, fourteen long double trees, 40 single trees and 145 fir trees were purchased at a total cost of £740 05 04 by John Maule, the earl’s chamberlain, although in the early stages of the building works, all suitable timbers from Boishon would have been re-used. Following a break from the work during the darkest months of the winter, masons returned on 18th March 1667 and ‘...began againe to lay upon the walls...’ That the mason’s lodge was extended indicates that more masons were expected to arrive. At the same time, “gesting gloves”³⁷ were purchased, implying that timber frameworks were ready to be positioned, and that the foundations and more than one storey of the house were certainly complete.³⁸ Timber would also have been needed for scaffolding as the walls gained in height. The contract with Nisbet, however, dated 28th January 1668, disclosed very little of the building’s progress, and mainly covers the working conditions and pay of the masons, repeating many of the terms and conditions from the original contract with Mylne in 1666.³⁹

³⁶ NAS GD45/18/566-1

³⁷ ‘gesting gloves’ – modern day usage refers to a glove or sleeve protecting the end of a joist, and there is evidence in Scotland of paper dipped in bitumen being used to protect the ends of joists from rot (pers. Comm. Neil Grieves) Medieval masons were permitted the privilege of wearing gloves to protect their hands when working with stone. However, Malcolm Airs referred to gloves being provided as protection for carpenters hoisting roofing frames into place. Airs, *Tudor and Jacobean Country House*, p.122.

³⁸ NAS GD45/27/128

³⁹ NAS GD45/18/566-2

Baine's contract for wright work was dated the 10th February 1668. It indicates that the new house was almost at a stage where it would be ready to receive windows, doors, flooring and roofing couples, and that Baine was to enter the site in May 1668 to undertake these works.⁴⁰ From this, it is clear that the house was fairly advanced by the time of John Mylne's death in 1667. A later note in the *Volume of Charges* also refers to 160 foot of ridge stones for the roof in February 1668, and a year later most of the roof had been slated, with the bastions and bell house completed during the spring and summer of 1670.⁴¹ This first contract signals the start of a long working association between James Baine and the earls of Panmure, which continued into the 1690s at Brechin Castle.

The extent of the building work already completed by the time of Mylne's death also refutes any suggestion of influence or changes brought about by Sir William Bruce, who, it has been suggested, worked at Panmure in the late 1660s based on stylistic similarities with his own house at Balcaskie.⁴² Bruce was, however, not involved until later. There are specific documented works at Panmure which include the west gates, and the two flanking courts built in the 1690s for the fourth earl⁴³, but there is no evidence of his direct input during the first building phases of the central house.

The earls of Panmure entered into a total of four contracts with James Baine at Panmure, spanning seventeen years from 1668 to 1685. A common stipulation in all these contracts is that the Panmures agreed to take responsibility for "timeously" providing all the necessary timber.⁴⁴ There was a similar clause in the 1666 masonry contract for the supply of stone.⁴⁵ If the earl failed to provide the wrights with the necessary timber in time, he was obliged to pay a penalty for each day the men remained idle. On the other hand, if Baine failed to fulfil his side of the

⁴⁰ NAS GD45/571-3

⁴¹ NAS GD45/27/128

⁴² Gow, *Scotland's Lost Houses*, p.52; McKean, *The Scottish Chateau*, p.252; Maule, *Registrum*, cxlviii.

⁴³ It is these which are similar to Balcaskie, but the written evidence actually cites Kinross as a reference for these buildings, see NAS GD45/18/614-12.

⁴⁴ NAS GD45/18/566-3 & 571-3 (copy)

⁴⁵ NAS GD45/18/566-1

agreement he was to pay 500 merks to Panmure.⁴⁶ Baine's wrights were also forbidden to make use of or fell Panmure's own forests on the estate for timber if they lacked materials; only Panmure's tenants were permitted to fell trees for this purpose.⁴⁷ Panmure would thus have had to monitor the supply of timber to and at the site, or fall foul of his contractual obligations. Critically, perhaps this was why he employed James Baine in the first place; since Baine as a timber merchant, would have been able to provide the different types and quality of timber needed for Panmure either from his own stocks in his yard in Leith, or by direct purchases from domestic and foreign supplies of timber.

The first contract, signed 10 February 1668, stated that Baine was to supply "ten sufficient wrights"⁴⁸ to carry out the work described in the contract, and be in attendance to observe and direct the work himself." This contract specified the piecework prices for windows, doors, flooring and the roof, and included hanging the finished doors, and fitting out the windows with their bands, snecks and rings. Panmure remained responsible for supplying the timber and ironwork for the work described in the contract, and also had to supply meat, candles and lodgings for the wrights.

Baine and his men "...entered to worke at panmure the 16 of June 1668..." and this naturally coincided with an increase in the purchase of timber for Panmure, including shipments from Norway delivered to Dundee.⁴⁹ This timber included approximately 3,500 deals at a cost of £1,460, probably for sarking and flooring or panelling and partitions. The largest quantity was purchased by John Maule, the earl's chamberlain, but some also came from Baine and David Johnston (who usually supplied trees rather than deals).⁵⁰ There were also quantities of knapholt and wainscot, probably to have been used for the doors, windows and shutters. Baine supplied a wide variety of timber types and cuts, as would be expected of a timber merchant, and he was able to supply oak wainscot and knapholt, both oak and pine deals, plus fine and

⁴⁶ NAS GD45/18/566-3 & 571-3 (copy)

⁴⁷ NAS GD45/18/571-3

⁴⁸ NAS GD45/18/571-3

⁴⁹ NAS GD45/27/128

⁵⁰ NAS GD45/27/128 and GD45/18/576/5

thick deals in large quantities. This demonstrates the extent and variety of the timber stocks Baine had accumulated by the late 1660s, and was an indication of his success as a timber merchant.

The specification for the roof structure at Panmure, excluding the two pavilions or bastions, stated that each ell of the roof was to be “double barked with sarking”. It also stipulated that the roofing couples were to be placed “sixteen or eighteen inches asunder”⁵¹, a decision to be finalised by the earl himself on site, implying that the earl was well enough acquainted with building practices to take responsibility for such an important decision himself. This information clearly illustrates that the roof at Panmure was to be a coupled (rafter) roof *i.e.* one in which the rafters are connected by collar-beams.⁵² The cost for wright work on the roof structure was priced at 16 shillings for each square ell.

These instructions, written in February 1668, stipulated that the wrights should be in attendance during May of the same year to carry out the above works. An examination of the *Volume of Charges* shows a corresponding increase in the purchase of timber from March onwards. Most significantly, it included the import of two cargoes of timber direct from Norway for Panmure - perhaps a reference to the roof timbers arriving? This could signify that the Earl of Panmure had ordered the roof timbers directly from Norway as Patrick Smythe was to do for Methven, between 1678 and 1681.⁵³

The dates of the two cargoes’ arrival at Dundee correspond with the start of Baine’s activities at Panmure. The first cargo arrived on board the *Good Hope* of Fraserburgh on 17 March 1668; approximately five weeks after the first contract had been agreed. Allowing three days travelling from Scotland to Norway, at least ten days if not more for collecting the cargo and two to three days sailing from Norway to Dundee, this means that the ship must have left port by the 1 March at the latest. This would have been a relatively fast turn around, but was similar to the time spent by Walter Angus from Aberdeen, who collected timber from Ryfylke in

⁵¹ GD45/18/571/3

⁵² J.Fleming, H.Honour and N.Pevsner, *Dictionary of Architecture*, (London, 1986), pp.267.

⁵³ Letter from Anne Keith to her husband Patrick Smythe 1681, Perth Museum and Gallery Archive 873 (BOX 449).

1621 (see page 78).⁵⁴ Skipper Gillespie's voyages, on the other hand, tended to be longer; he spent between two and three weeks collecting timber at the Ryfylke fjords in the 1660s, plus three to four days for the outward and return voyages. His logbook shows that Gillespie spent more time when sailing to different sawmill owners, which also implies that for such a fast turn around, the timber for Panmure was probably collected from a single sawmill or forest-farm.⁵⁵ What seems certain is that the first cargo of timber was sent for, almost immediately, once the contracts for wright work had been signed.

The second cargo arrived at Dundee in the *Rising Sun* of Leith on 27 June 1668, eleven days after Baine's men had started work.⁵⁶ By the same reckoning, this vessel had probably left for Norway at the end of May or beginning of June. The timing of these timber cargoes would have been crucial to not only the completion of the building works but also the fulfilment of the contract. If the Earl of Panmure had defaulted on the provision of materials, and the wrights had been prevented from working, he would have had to pay the penalty of fifteen shillings per day for each wright that remained idle.⁵⁷

In total, the ships delivered to Dundee 160 trees 27 feet (8.24 metres) in length, 259 trees 22 feet (6.72 metres) in length and 340 sawn planks 15 feet (4.58) in length. The cargoes also included the 'cuts' of timbers that had been trimmed at their source, which suggests that specific dimensions were ordered beforehand, implying that the roofing timbers may have been initially framed and built in Norway, before being dismantled and sent to Scotland.⁵⁸

Without physical evidence, is there any way to confirm the likelihood that these timbers were for roofing, based on the documentary sources? For example, can surviving plans or drawings be used to extract any additional information relating to timbers used at Panmure? William Adam's drawings and elevation of Panmure in *Vitruvius Scoticus* give us a rough

⁵⁴ Brandal, "Skog, sager og trelasthandel", p84.

⁵⁵ Paula Martin, *Skipper Alexander Gillespie* (transcription of log book detailing voyages including Norway 1662-1663). St.Andrews University Archives.

⁵⁶ NAS GD45/27/128

⁵⁷ NAS GD45/18/571/3

⁵⁸ NAS GD45/27/128

indication of the overall dimensions of the house.⁵⁹ From these it is possible to estimate approximate sizes of the roof span, the height of the house and the internal flooring areas. These dimensions can then give an approximate idea of the dimensions and quantities of timber needed for the roof structure (Figure 58 A, B & C).

⁵⁹ Adam, *Vitruvius Scoticus*, see Plates 129, 130 and 131.

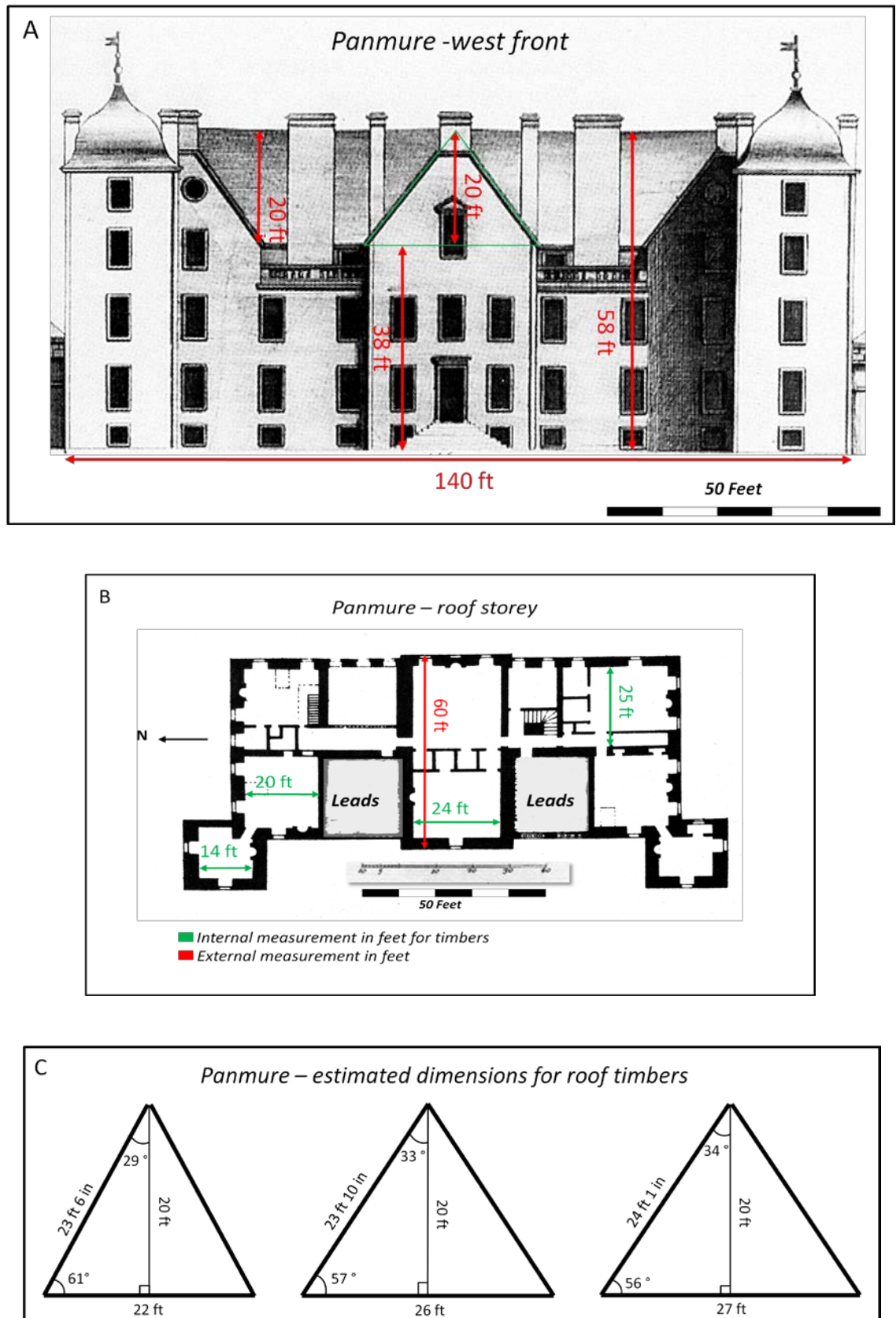


Figure 58 A, B and C: Approximate internal and external measurements of Panmure House, adapted from William Adam's drawings in *Vitruvius Scoticus*. Estimated dimensions for the main roof timbers.

If the dimensions shown in Figure 58 A and B are used, plus one foot overlap at each end,⁶⁰ the various spans needed for the different roof joists would have measured from 17 to 27 feet in length. Thus “trees” of 27 and 22 feet were certainly of adequate lengths and quantities for some of the roof structure. If timber was primarily available in ells, then 27 feet equalled thirteen Norwegian ells fairly accurately. However, 22 feet could only have been obtained by trimming an eleven ell baulk. In Scottish terms, the nearest ell measurements would have been nine and eight ells respectively, although both these sizes would have needed to be trimmed to the required sizes. The ships’ timber cargoes were listed in feet, which may indicate that when specific timbers were required, as in this case for a roof structure, then feet were used in preference to ells. Both Norwegians and Scots were familiar with feet and inches which would have provided more accuracy for these components. The purchase of timbers that had been trimmed to specific sizes at source also indicates that an exact specification had been sent with the skipper to Norway.

Although these cargoes would have provided all the necessary timbers for the main roof, in June 1668 there were also substantial quantities of “double trees” purchased by David Johnston from merchants in Arbroath. In total 178 double trees were purchased (with no lengths noted) at a cost of £168 08 08 (approximately 19 shillings each).⁶¹ These were cheaper than the first cargo of Norwegian timbers where each 27 foot tree cost £5 per piece and the 22 foot trees cost £1 10 each. The price suggests that the timber purchased from Arbroath (but probably imported from Norway) may have been the shorter length of 22 feet. Such short lengths would not have been sufficient on their own for the longer roof joists, but may have been suitable as rafters, collar beams, and joists for the roofs and flooring of the two pavilions. The planks from the two cargoes delivered in 1668 would have been used as sarking for the roof, an important function during this phase of the building process.⁶²

⁶⁰ R.T. Gunther, (ed.) *Sir Roger Pratt: Charles II's Commissioner for the Re-building of London after the Great Fire*, (Oxford, 1928) p. 240.

⁶¹ NAS GD45/18/27/128

⁶² In Scotland roofs were completely covered with sarking boards to which slates were nailed without timber battens. This makes for strong wind resistant roofs, often with a steeper pitch than those found in England for example.

Further evidence that these timbers related to the upper stories and roof can be derived from the start date of slating work by Andrew Low, which began 14 July 1668.⁶³ The slates, according to the *Registrum de Panmure* were provided locally by the Laird of Guynd, and were probably Carmyllie slates.⁶⁴ By August 1669 Low had received payment for “3 score rood of work” for completion of the slating of the main body of the house. In 1670 he received payments in May, August and November for the final work and slating of the bastions and bell house.⁶⁵

The *Volume of Charges* also recorded the plumber James Adamson worked at Panmure from 1669 to October 1670, probably roofing of the leads or viewing platforms on the west front of the house. This work used 26 rolls of lead, weighing more than 540 stone. The total costs of lead and his workmanship came to £1,601 11 03. A major part of these costs was the lead itself, both unwrought and wrought which in total amounted to approximately 768 stone (4,877 kilograms).⁶⁶ By the winter of 1670 the house must have been more or less finished, and was certainly wind and watertight.

The floors at Panmure were priced by the square ell of flooring deals or planks. The principal rooms such as the *Great Hall* and the *Great High Dining Room* had floors with wider spans which incorporated a broken jointed construction for the joists (Figure 59). This type of flooring required highly skilled and proficient workmen, and consequently they were more expensive to install. At Panmure, the workmanship for these floors was priced at 12 shillings the square ell and ‘...flooring laid in the ordinary way ...’ was priced at ten shillings. Baine was immensely proud of the floors he installed at Panmure and often referred to them as examples of his superior workmanship. He later laid the same type of flooring at Holyrood and Brechin.⁶⁷ Baine considered his floors at Panmure to be of such excellent quality that they appeared to be neither glued nor nailed to the joists, ‘But lyes as if were als close as they were all in one

⁶³ GD45/18/27/128

⁶⁴ Harry Maule, *Registrum*, xlv.

⁶⁵ NAS GD45/18/27/128

⁶⁶ NAS GD45/18/27/128

⁶⁷ NAS GD45/18/1616/15

bourde,'⁶⁸ a description that closely echoes Sir Roger Pratt's (the king's commissioner for the rebuilding of London) description of flooring,

Let them be fastened down with headless nails for that is much the neatest, and laid so close each other that they seem to be but one piece of timber...⁶⁹

When problems emerged with some of the floors at Panmure at a later date and Baine had to re-lay them, he blamed Panmure for providing sub-standard timbers that had not been sufficiently seasoned.⁷⁰

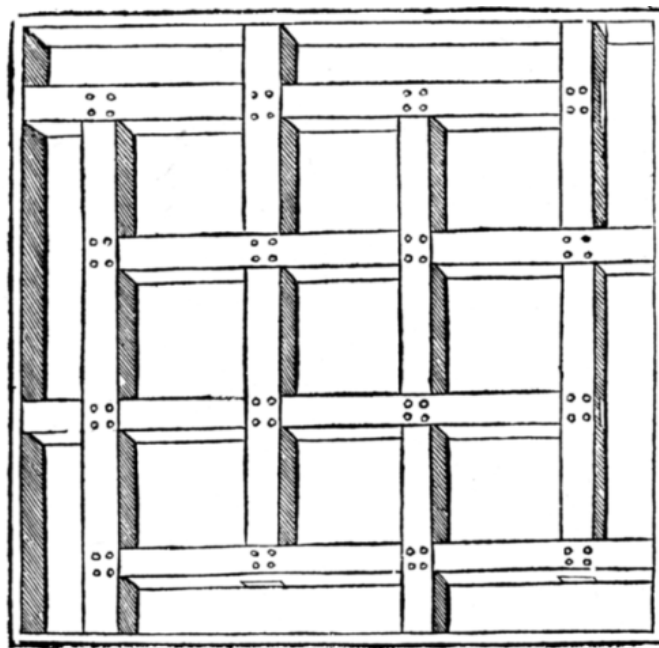


Figure 59: Broken jointed flooring joists, the same framing method installed by Baine at Panmure and Holyrood, as illustrated by Serlio in *Tutte l'Opere d'Architettura*.

The size and style of the windows for Panmure were specified in some detail, with different dimensions stipulated for the upper and lower stories. All of the window “caisses”, except those on the lower storey, were to be made with “bound broads” - shutters and a small moulding, with

...four below and two above for the glass, which are called glassbroad which caisses are to be double [chocked?].⁷¹

⁶⁸ NAS GD45/18/588

⁶⁹ Gunther, (ed) *Sir Roger Pratt*, p.66.

⁷⁰ NAS GD45/18/588

⁷¹ NAS GD45/18/571-3

Each of these windows was priced at £6 10, and included “snecks” and “iron rods” which were to be decided upon by the earl as he saw fit. The total number of these windows and their size were not recorded here, but they were probably produced by the wrights on site at Panmure where timber and glass were delivered.

Baine presented an estimate with details and sizes for ‘12 great windows’ in the Great Hall and Dining Room at Panmure that were to have the typical Scots proportions of approximately 1:2 . These were to be 8’6” x 4’6” in the lower six windows (although only five would be required since the entrance door on the west front would take the place of one of the windows); the upper six were to be 6’6” x 4’6” (Figure 60). The price of each window was £8 and included the beading and moulding on the inner and outer window cases. In addition there was one single window case of 7’6”x 3’6” or 4’ at £6, which may have been for the west front of the attic storey.⁷²

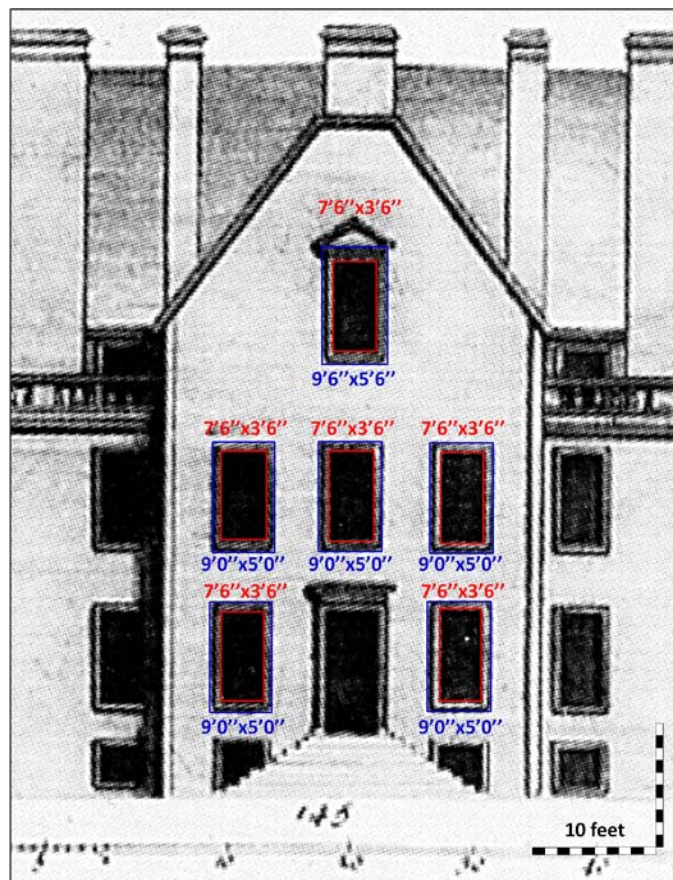


Figure 60: The west front at Panmure showing the window case dimensions (approximately 1:2 ratio) for the principal rooms at Panmure.

⁷² NAS GD45/18/622

The lower storey windows were divided into two sizes. Of those to be 3'6" x 2'6", Panmure decided which were to be made with "bound broads" - hinged shutters - on both the lower and upper part of the window, and those which were to have shutters below only. Those with shutters both below and above were priced at £3 10 and windows with only shutters below were ten shillings cheaper at £3. Smaller windows sized 2' x 1' were to only have bound shutters and were priced at £2 each. There were no quantities recorded for the total number of windows required in this contract: instead they are priced per piece. However, a later document in 1669 referred to 67 windows being installed⁷³ and there is an account from 1671 for 100 windows costing £650.⁷⁴ Adam's plans of Panmure illustrated 120 window apertures in total.⁷⁵

John Masterton glazier, the son of His Majesty's Master Glazier who had earlier repaired windows at Boishon (and whose role he later inherited), was paid for making and putting up glass windows in June 1668. Around the same time, 30 chests of French glass costing £13 per chest bought at Dieppe (Normandy), were delivered to East Haven (close to Panmure) via Montrose. Masterton also provided lead and some English glass from his own stock. His work using French glass cost two shillings six pence per foot⁷⁶; English glass was charged at four shillings six pence the foot. The work using the French glass was charged at a cheaper rate since it had been purchased by Panmure, and he therefore only had to pay labour costs. Work which used English glass covered both costs of materials and labour. In total, the glazier's work came to £816 15 00 and Masterton received complete payment for his work in May 1670.⁷⁷ Once the windows were installed and glazed, the house would have been weather proof and ready to receive interior fittings and decoration.

⁷³ NAS GD45/18/571-4

⁷⁴ NAS GD45/18/594-5

⁷⁵ Adam's drawing of the west front probably illustrated windows inserted by William Eizat of Edinburgh, he replaced earlier windows with 37 sash windows on the principal floors in 1714. See NAS GD45/18/759/3-6.

⁷⁶ A glazier's foot equalled eight inches in England and nine in Scotland. An act was passed in 1664 to introduce the statutory definition of the foot as twelve inches in order to control measurements; see Connor, Simpson, Morrison-Low, (eds), *Weights and Measures in Scotland: A European Perspective*, (East Linton, 2004) p. 47-50..

⁷⁷ NAS GD45/27/128

A contract for painting the completed windows was agreed in July 1671 with Charles Wilson painter and burgess of Edinburgh.⁷⁸ It specified 25 bed-chamber windows to be painted, including the casements and shutters, inside and out, priced at £10 per pair. Three coats of white leaded paint with linseed oil were to be applied, with marbling on some of the windows, a decision that Panmure made on site. Furthermore, the outside of the casements were to be painted with a ‘lead colour’, which would have been gunmetal grey and probably used to make the shuttered windows appear to be glazed when viewed from a distance.⁷⁹

The specifications for the door woodwork illustrate the different finishes intended for high and low status divisions in the house *i.e.* public and private or unseen areas. The doors for the principal rooms would have been made with good quality wainscot. All double doors were to be glued on the facing side, and the other side was to be made with “...sawen or whole deallis with one back forelip or to be planted with moulding on the face... at the said Noble Earle’s [pleasure]...”⁸⁰ *i.e.* these decorative details were to be decisions that Panmure made himself on site. The doors with mouldings were priced at £3 and the plain, glued doors with a “back forlip...” were priced at £2 10. A later account describes several types of doors that probably relate to this part of the contract: of a total of 47 doors 21 were planked doors, ten were of four bound leaves (wainscot boards), thirteen were plain, two were board, and one was wainscot - probably a high status entrance at the foot of the staircase.⁸¹

Baine did not confine himself to the supply of timber and implementation of wright and plaster work at Panmure. He also shipped six weather vanes and six globes “ane great glob of copper for the knock [the gilding therof]” from Edinburgh, and iron chimneys from both London and the surrounding locality.⁸²

⁷⁸ NAS GD45/18/591/1-4

⁷⁹ Wilson also painted and gilded the family’s coat of arms on a chimney piece and painted the parlour in princes wood. He was also involved with the funeral preparations for the second earl in 1671 and he drew the arms for the plumber for the lead coffin and blacked some chairs and batons, and painted/marbled a stool and clock case. With thanks also to Michael Pearce for furthering my understanding of this contract and related accounts.

⁸⁰ NAS GD45/18/571-3

⁸¹ NAS GD45/18/594-5

⁸² NAS GD45/18/576-1 and 2

Additional ironwork was produced by a number of local smiths. Alexander Blaire Smith provided ironwork for the building from 1 January 1668 until 20 January 1669. He was also responsible for the regular shoeing of the estate horses, which suggests that he had a forge either nearby or on the estate.⁸³ In January 1670, John Smith in Inerkilore (Inverkeillor) received payment for window bands (the metal frames around windows), and in June he completed 109 pairs of window bands, latches and hinges. Three other local smiths (John Thomson, John Horn and Robert Allen) likewise provided ironwork in November 1670.

Probably the smallest, but most significant items in terms of quantity, used in building Panmure were nails. Several pages of accounts relate to the first contract listing the types, quantities and the producer's name, beginning 16 March 1668 and continuing until 1 December 1671. Some, for example garron nails, were priced by weight. Single and double floorings, "plenshone nails"⁸⁴, door nails and others were individually counted. David Fluker, "smith in the path head of kirkadie" provided initial supplies of single and double flooring nails, door nails, plenshone nails, small garron nails and garron nails. To begin with, local smiths provided only garron nails, but over time they also produced these different types of nails, suggesting they copied Fluker's nails. However, Fluker continued to supply nails, which suggests his nails were a specialist product, perhaps the type Baine required for broken jointed floors. In total, the cost for nails amounted to £1,406 03 09.⁸⁵

The second contract with Baine for Panmure, dated 11 March 1669, specified interior finishes, roofing the bastions (now referred to as pavilions) and a bell house for which the location has not been established. Baine's instructions were to make roofs for ...the two pavilions with ane splendour rooffe lyke to the bell house...'⁸⁶ The agreement instructed the lining of 67 windows and their mouldings (architraves), the roofs, fitting interior partitions and

⁸³ NAS GD45/18/740

⁸⁴ Plenching (plenshone) large nails used for flooring in Pride, *Glossary Scottish Building*, p.60.

⁸⁵ NAS GD45/27/128

⁸⁶ NAS GD45/18/566-4 & 571-4

doors, cupboards, shelves and the great staircase. A total sum for the work of 4,500 merks Scots (£3,000) was agreed upon, and there was no penalty clause.⁸⁷

The staircase was to be of oak and ‘...after the ordre of the workmanship of the stair caise of donybryssoll [Donibristle]...’ owned by the Earl of Moray;⁸⁸ a house which had been destroyed by fire and rebuilt several times in the sixteenth and seventeenth centuries. This instruction implies that Baine had to be familiar with the staircase already; perhaps it was even his own work. Since there is no documentary evidence to support this, all we can be sure of is that Panmure was citing a specific example for Baine to employ as a reference, a common practice in seventeenth century Scotland⁸⁹ and probably a means for ensuring better precision in building works.⁹⁰ There are very few examples of existing or recorded timber stairs dating from the seventeenth century in Scotland,⁹¹ the majority having been made from stone as at Holyrood or Thirlestane. Surviving timber examples found in great houses include Wemyss Castle, Kinross House and Callendar House. Preston Lodge in Cupar, Fife built in 1623, is a rare example of a seventeenth century town house with a timber stair dating from 1690. These are all open well timber staircases but the style of the balusters is quite different in each case, Kinross has carved balustrades (Figure 61).

⁸⁷ NAS GD45/18/571-4

⁸⁸ NAS GD45/18/566-4 & 571-4

⁸⁹ John Dunbar and Katherine Davies, ‘Some Late Seventeenth Century Building Contracts’ in *Scottish History Society Miscellany XI* (Edinburgh, 1990), p. 273.

⁹⁰ McKean, *Scottish Chateau*, p.270.

⁹¹ James Simpson, ‘The Evolving Stair’ in *The Journal of the Architectural Heritage Society of Scotland* Vol. XVIII, (Edinburgh, 2007)99-114.



Figure 61: Timber stairs from left to right, Kinross built c. 1685 ©RCAHMS, Wemyss c.1660s attributed to John Mylne © Country Life and Preston Lodge c.1690 ©RCAHMS.



Figure 62: The oak staircase at Panmure photographed prior to the building's demolition in 1955. The oak *knapho*It bought from Baine was used for these balusters; the wainscot also supplied by him is evident on the far wall. Before the house was demolished the staircase was removed and sold at auction; unfortunately attempts to track it down have proven unsuccessful. Photograph Colin McWilliam, ©RCAHMS.

The great stair at Panmure formed an integral part of the route taken by guests, who having first entered the *Great Hall*, took the stairs up to the *Great Dining Room* on the principal

floor. This vertical arrangement was similar to John Mylne's design of Leslie House built for the earl of Rothes, and both buildings had a transverse hall with the great stair made from timber at the rear.⁹²

An analysis of timber purchased by Panmure from Baine during 1669 clearly reflects the work outlined by the second contract. The staircase features prominently and details were listed of the '...nyntie four great knapl for the ballisters of the great staircase',⁹³ and 12 great trees probably also for the staircase purchased from Baine in April 1669. Fortunately, the staircase was photographed and removed before Panmure was demolished, and the pieces of knapholt used for the balusters can be seen in Figure 62. This timber was probably pre-cut to size and imported from Norway, but carved and shaped on site. Oak wainscot panelling can also be seen lining the walls of the great staircase. Additional materials mentioned in the same account from Baine included 1,690 dealls costing approximately £900 and wainscot for partitions, shelving and doors at £450.⁹⁴ Twenty planks, 20 trees and 200 long deals made up the remaining timber purchased in 1669.

The second Earl of Panmure died 24 March 1671, when Baine acknowledged the complete payment of all the wright and plaster work belonging to past contracts, "...betwixt the deceist earle of Panmure..."and himself.⁹⁵ The earl's wife Jean Panmure temporarily took over the affairs of building the house, so in July of the same year, received an account from Baine for wainscoting and oaken deals, and a reminder for payment for the late earl's coffin in September.⁹⁶

George, third earl of Panmure inherited in 1671, and in June 1672 Baine entered into a third contract. It was divided into two. The first part specified the plaster work required for the principal storey of Panmure House, where the great rooms were to be decorated in rich fruit work according to *drafts*. The reference to drawn designs demonstrates that sketches of the

⁹² This arrangement was similar to Chevening. Lauderdale's houses at Thirlestane, Lethington and Brunstane were laid out in enfilade with the stair at the vestibule. Pers.comm. Charles Wemyss.

⁹³ NAS GD45/18/576-4

⁹⁴ Appendix III - Panmure Timber.

⁹⁵ NAS GD45/18/594 - 1

⁹⁶ NAS GD45/18/594-10

proposed ceilings had been drawn up and agreed between client and contractor. These may have been prepared by Panmure himself, or Mylne, but more probably by Baine or one of his associated craftsmen.

Baine, who by now held the title *His Majesty's Master Wright*, was again to provide sufficient wrights and skilled craftsmen to carry out the work, '...upon his own proper charges....'⁹⁷ This included providing his men with hair for the plasterwork, which he probably acquired from shoemakers who would have hair leftover after preparing skins for leather.⁹⁸ Bryce's alterations to the house in the nineteenth century replaced much of this work by Baine's men. Today the only evidence that remains of Baine's ceilings is some photographs taken just prior to the building's demolition in 1955 (Figure 63).

⁹⁷ NAS GD45/18/600

⁹⁸ Cheape of Rossie papers 6/83, University of St Andrews: Letter Ralph Wright to Jas Cheape of Rossie about price of hair for plasterwork at Rossie, dated Couper 18 December 1706. Includes discharge by Robert Smyth (younger) shoemaker in Newtoun of Falkland to Thomas Aisone for payment of 14 stons hair given to Alexr Brownn & Richard Rikie, servitor to the Laird of Rossie's use.



Figure 63: Baine's plaster ceilings executed during 1672 at Panmure.
Photograph Colin McWilliam ©RCAHMS

The second part of the contract concerned new stables and other ancillary buildings under construction at this time, including byres and a washhouse. These may have been located on the later site of either the 'woman house' or kitchen court that formed the flanking wings built by the Bauchop brothers to designs by Bruce and Alexander Edward in the 1690s.⁹⁹ As before, Baine was responsible for the wright work, which included putting up roofing, making storm windows (*i.e.* dormer windows), doors and porches and laying the floor above the stables. The discharges list additional costs for making mangers, fixed beds, windows and doors.¹⁰⁰ There was a remarkable difference in the prices quoted for these works; the decorative and more skilled plasterwork priced at £2,000 costing considerably more than the more ordinary carpentry work required for completing the stable block at £133 13 04.¹⁰¹

In the first contract with Baine, Panmure had provided the wrights with "fyre" for preparing their meat, and candles to allow them to work in the winter and "ane hous to lye in..."¹⁰² By the time of the third contract, however, Baine was obliged to provide not only some of the building materials, but also meat, drink and lodgings for his men. This suggests that because the house was now habitable the family may have already taken up residence and the earl no longer had any suitable accommodation for the wrights at Panmure.

As with the second contract in 1669, no penalty clause was included, suggesting it was more important for the initial building phase to be carried out promptly and on time. The secondary fitting out of the interiors and ancillary buildings were perhaps less critical once the main building was made wind and watertight. It would certainly have been inconceivable to undertake any decorative and costly plasterwork if the building had not been sufficiently weatherproof.

At the same time as signing the third contract with Baine in June 1672, the third earl also entered into a separate agreement with Alexander Nisbet for building the West Gate. This was to be done, '...according to ye draught given by Sir William Bruce & muilts made for that

⁹⁹ GD45/18/614-1-14, and Mylne, *Master Masons to the Crown*, p.232.

¹⁰⁰ NAS GD45/18/588

¹⁰¹ NAS GD45/18/600

¹⁰² NAS GD45/18/571-3

effect. It is to be at least sevintein foot heigh,' (Figure 64).¹⁰³ This suggests that the building was nearing completion and already inhabited by the third earl and his wife, whose coats of arms feature on the gate posts. This was Bruce's first involvement with the earls of Panmure, and he was not, as implied by the *Registrum de Panmure*, responsible for the authorship of Panmure House.¹⁰⁴ In 1671, Bruce had been made Surveyor General and was in charge of the building works at Holyrood, a post to which he had been promoted with the support of the Duke of Lauderdale. In the same year, he designed the entrance gateway for Lauderdale's wife the Countess of Dysart at Ham House, her main residence in London. The stonework was prepared in Scotland and shipped to London. The gate at Ham House could have influenced the Panmure's decision to choose Bruce for their gate, as they probably wanted a similarly prestigious entrance for Panmure. The correspondence between the countess and Bruce recorded her suggestion for a pair of wicket gates within '...each leaf of the Irongate for ordinary use...' a suggestion that does not appear to have been followed up, however a similar idea was incorporated at Panmure, but only in one of the leaves (Figure 65).¹⁰⁵

This was not the only time the Panmures consulted Bruce and in 1693, the fourth earl wrote to him seeking advice for some revisions and additions at Panmure,

I shall be glad to have your opinion both as to the Offices which are yet to be build as also what reformationes you think might be made within the house...¹⁰⁶

The earl of Panmure specifically referred to Kinross House as the guide for these new courts where the chimneys of the kitchen court were to be,

...at least equall in hight with the easeing of the great house and to make them off equall forme with those of Kinross...¹⁰⁷

These works were undertaken from 1694 to 1699 by Tobias Bauchop, the same mason-architect that assessed Baine's later work at Brechin. He built the new domestic offices at Panmure - the

¹⁰³ NAS GD45/18/599-1&2

¹⁰⁴ Maule, *Registrum*, p. 148.

¹⁰⁵ R.S.Mylne, *The Master Masons to the Crown of Scotland and their Works* pp. 167-168 and 175.

¹⁰⁶ Mylne, *Master Masons to the Crown of Scotland and their Works*, p.232.

¹⁰⁷ NAS GD45/18/614/12

flanking kitchen and women's courts - and modified the house's internal arrangements in accordance to drafts and instructions drawn up and witnessed by Alexander Edward.¹⁰⁸



Figure 64: The west gate at Panmure designed by Sir William Bruce and built by Alexander Nisbet. "Item Alexr Nisbet oblidges himself to cutt two coates of armes one with my Lords coat alone with the supporters names and mottoes and all that in heraldrie belongs y yrto Ane oyr with my Lords and my Ladies together after the same manner..." Photograph: author 2005.



Figure 65: The main entrance gateway designed by Sir William Bruce for the Countess of Dysart at Ham House, Surrey. The stone pillars were prepared in Scotland and shipped to London. Instead of a wicket gate to simplify access, the gates are hinged to divide into four parts. Photograph: author 2009.

¹⁰⁸ NAS GD45/18/614/1-14

There was a gap of 13 years between the third and Baine's fourth and final contract agreed with the third earl at Panmure on 9 October 1685. This detailed description of work to be carried out by Baine specified mainly finishing work such as fitting of skirting boards (washboards), panelling and lining work, doors, mouldings and architraves. It identified the rooms that had remained unfinished since 1672 when Baine had last been working at Panmure, namely the North Room, the Star Chamber, the North East Chamber, the Great Dining Room and stair – probably the secondary stair since the earlier contracts had specified the great stair.

As in previous contracts, Panmure was to provide the necessary timber and Baine was to provide everything else needed to complete the work within a time limit of three months. It was to be completed by the 1 February 1686 for a total cost of £233 06 08; otherwise Baine was to pay 100 merks in compensation. This clause probably indicates that the earl had decided it was time for the new house to be finished properly and that the only way to ensure that this happened was to put pressure on his main contractor - Baine.

The third earl died on 1 February 1686, the same day as Baine's completion date. He was aged 36, and he may have been suffering from a life threatening illness and perhaps had determined that it was his duty to ensure Panmure was finished for his successor. He had no children and so was succeeded by his younger brother James Maule of Ballumbie.¹⁰⁹ James was a member of King James VII and II's Privy Council, and in 1687 married Lady Margaret, the youngest daughter of the Duke of Hamilton.¹¹⁰ We can only assume that Baine was successful in fulfilling this final contract on time since he subsequently entered into further contracts with the fourth earl of Panmure for work at Brechin Castle in the later 1680s and 1690s (see Chapter 11).¹¹¹

¹⁰⁹ Stuart Handley, "Maule, James, fourth earl of Panmure (1658/9–1723)," in *Oxford Dictionary of National Biography*, ed. H. C. G. Matthew and Brian Harrison (Oxford: OUP, 2004); online ed., ed. Lawrence Goldman, October 2006, <http://www.oxforddnb.com/view/article/18367> (accessed December 10, 2008).

¹¹⁰ Maule, *Registrum*, xlv.

¹¹¹ NAS GD45/18/1616

Contractual Disputes

Just after death of the second earl, Baine presented several accounts addressed to the Earl of Panmure, dated 20 April 1671, identifying work done by Baine and his men at Panmure, ‘...which were not nominal be contract...’¹¹² They were probably presented to his widow. Five pages described work executed by Baine and listed approximately £900 owed to him. He also complained that the earl had been obliged to give each of his men an allowance for their travel expenses [from Edinburgh] to Panmure. The earl had given this payment to the masons in 1666 and allowed 58 shillings for every three masons travelling from Edinburgh.¹¹³ However, there is no such specification in the later contracts with Baine for his men and as they received nothing from Panmure, Baine financed their expenses himself.¹¹⁴

Much of the additional work that Baine claimed for at Panmure was linked to the other trades working at the house, and to requests by the earl himself for work to be re-done in a different manner. It included assembling scaffolding around the bastions for the slaters, on the bell-house for the plumber, and for the masons when ‘putting on the stone stormeings’ – dormer windows. After having put up scaffolding it had to be dismantled, as did the mason’s lodging - twice - and then re-built again. The work also included making ‘ane new long board for the plumer to cast his caikes of lead upon...four deall leaders and two trie ones to the slater...[and] making ane table for the glasier...’. Baine also assembled some of the earl’s household furniture and listed costs, ‘...for joining of your dyning roum table, glewing it; and putting ane new curved stoupe to one choar with some bands is £3 10....’¹¹⁵ Many of these items might have been expected to have been within the responsibility of a main contractor, for example putting up scaffolding as required by other trades, and it may be a sign of Baine’s inexperience that he had not accounted for these costs in his original estimates for the building works at Panmure. Subsequently this oversight resulted in extra costs that he had to cover himself. Any changes to

¹¹² NAS GD45/18/588 and 594-6

¹¹³ NAS GD45/27/128

¹¹⁴ This was a similar situation to that which Baine found himself in at Holyrood for much larger sums, wherein he had had to pay his men himself whilst waiting for his accounts to be settled by the Crown.

¹¹⁵ NAS GD45/18/588 and 594-6

the agreed work should have been approved by Panmure first, and failure to do so was perhaps another indication of his lack of experience.

Baine also presented accounts for works where he claimed his work had been done to a much higher standard than was actually required of him by the contract. In 1671, he declared that he had completed work in the high dining room that was six times better than he was obliged to do. He claimed Panmure had requested Baine's help with the 'ordour of the worke in his finest rouses' by doubling the order of the work and for which he was promised payment.¹¹⁶ The original contract had specified only plain work for the panelling with one small moulding on each side of the bands for gilding or painting. Baine also claimed his work to line the gable walls of the *Great High Dining Room* was six times better than than he was 'oblidged' to do by contract. Baine went on to declare that his work laying the floor of the *Great High Dining Room* and the *Low Parlour* was of such a high quality that it had taken four times the work he was obliged to perform. Baine made similar claims for his plasterwork on the staircase and all the rooms on the second storey.¹¹⁷

Baine's claims for this extra work appear to completely disregard the original contracts with Panmure wherein prices were agreed, for example flooring was charged 'per eln squared'. If the work took Baine four or six times longer than estimated, then unless it was for want of suitable timber that his men were delayed, then it was not Panmure's responsibility. The costs for lining the gable walls of the *Great Dining Room* were originally agreed within the total costs of the 1669 contract that totalled £3,000, likewise the costs for plastering the principal rooms were included in the 1672 contract totalling £2,000. If Panmure had requested additional wood and plasterwork for these rooms Baine would have been wise to have obtained Panmure's authorisation and revised costs in writing before executing the work.

Unfortunately there is no record of the Panmures' response to Baine's claims for extra works, but Baine's description suggests that several of the floors had had to be re-laid due to poor quality timber. It had not been properly seasoned, which would have resulted in the planks

¹¹⁶ NAS GD45/18/588

¹¹⁷ NAS GD45/18/588

warping and shrinking. Several floors had to have their joists cut out including the low parlour and ‘my lady’s bed chamber’. No explanation was given as to why these joists were removed, but it may have been due to rot; and further problems also arose with the joisting work of the pavilions. Since Panmure was obliged by contract to supply the necessary timber, Baine pointed out that he should not be liable and that his,

worke being sufficientlie close att the first and the altering therof
being to my great expense and damage...I cannot be mead a Lowser.¹¹⁸

Strangely, he did not consider that it might have been his professional responsibility to judge whether or not the timber was of suitable quality before his men used it. At the same time Baine also reminded Panmure of his promise to reimburse him for some window cases and that the Earl of Kinghorn (*i.e.* Strathmore)¹¹⁹ was witness to this promise at his lodging in Edinburgh.

The four contracts agreed between Panmure and Baine came to a total of £5,336, in addition to piecework for all the window cases, doors, flooring and roofing of the first contract. An account dated 1671 for £7,516 charged for most of this piecework.¹²⁰ This first contract based on piecework may have been the most problematic of the agreements between Panmure and Baine. It had not stipulated the total number of windows and doors, nor total areas of flooring and roofing to be undertaken, whereas the later contracts agreed a final price for the works specified. In total, Baine presented accounts of approximately £11,500 and signed receipts for approximately £15,300 of money he received from the Panmures implying that, in the end he was not ‘...mead a lowser’ and his claims for extra work were justified. On the 26 April 1671 Baine acknowledged payment of,

all wright work and plastering of the new hous of panmour and all other
accountms dew to me be the decest earle of panmour and the new
earle...only the soume of twa thousand seven hunder and sextie thrie pund
Scots money which is yet resting to me...¹²¹

¹¹⁸ NAS GD45/18/588

¹¹⁹ In 1672 there is an additional contract agreed between James Baine, Alexander Nisbet and the Earl of Kinghorn. Unfortunately the site is unknown as part of the manuscript is missing but may be Glamis or Lyon. The contract refers to work done at Panmure, ‘timber bound worke as the parloure of Panmure’. Baine was required to do plaster work and provide Nisbet with the timber necessary for scaffolding, and to receive and dispose of the old “gesting flooring from stentiells, dorr locks...” Strathmore Muniments 148/1/183

¹²⁰ NAS GD45/18/594-5

¹²¹ NAS GD45/18/594

This outstanding payment of £2,763 for work undertaken during the 1670s was finally made to Baine on 11 March 1672.¹²² Baine also received payment from Panmure for timber that he supplied, which according to the surviving papers amounted to £2,100 where Baine was named as the supplier. A further £1,000 worth of timber may also have been provided by him where no supplier was named.¹²³

The types of timber described in the Panmure accounts referred mainly to various types of “trees” *i.e.* joists or beams. They are described as single, double, long double and great. Whilst there is little indication of the exact dimensions involved, it demonstrates that the thickness was of prime importance. Adjustments to length could easily be carried out by carpenters on site, but little could be done to compensate for the wrong breadth of baulks. Large quantities of deals or planks were described as short, long, thick or fine. In the two cargoes from Norway, the length of planks was fifteen feet. The Dundee Shipping Lists of the 1660s only list unspecified quantities and dimensions of deals and trees imported from Norway, and there are no records for the period from 1665 to 1671. The lack of detail suggests that the dimensions of these were probably widely known and standardised measurements were in use by the building trades. However, without any physical evidence remaining at Panmure, their precise measurement can only be estimated from Adam’s plans.

The physical dimensions of timber recorded in the *Volume of Charges* included six nine ell timbers and thirty-eight twelve ell timbers, which if converted from the Scottish standard ell measurements used from 1661, equalled 8.46m and 11.28m respectively.¹²⁴ These substantial pieces of timber were probably used for weight-bearing structures such as the staircase and principal ceilings that would have had to carry heavy, ornate plaster work.

¹²² NAS GD45/18/594

¹²³ See Appendix D

¹²⁴ NAS GD45/27/128

The oak timber used at Panmure included planks: small, great and long knapholt; ‘wainscot daills’ and ‘short wainscot’¹²⁵ (probably for panelling), windows, doors, and shutters. The exceptions were the oak pieces of knapholt or ‘knapl’ that Baine specifically supplied for the balusters of the great staircase at Panmure. In this case the term *knapholt* probably referred to relatively stout and squared off pieces of oak that were large enough to have balusters carved from them rather than the more common definition of knapholt as cut and squared planking, or barrel staves. Such pieces of oak knapholt may have originated in Norway, and were recorded in the DSL as arriving in Dundee during the 1640s. Another possible supplier could have been either the Baltic – possibly from a German source such as Bremen - or the Netherlands where the timber, particularly finer wainscot, could have been processed using more advanced sawmills.¹²⁶

Panmure had to supply all the necessary timber for the building works at Panmure, which included imported timber. Primarily, he would have preferred the most economic means of supplying materials, which would have been timber from his own woods that Baine’s men had been forbidden from felling. If his own sources of timber were not sufficient, then buying timber from local merchants would have been his next preference. Purchasing timber from Baine was likely to have been his final option, since although the most reliable source was probably the most expensive.

From the quantities of timber purchased and as one would expect, it is quite clear that the estate at Panmure was not able to provide all of the timber required for the building works.¹²⁷ Where possible, structural timbers from Boishon would certainly have been re-used at Panmure and whatever was not suitable could have been used for scaffolding. At the end of an estimate for wright work by James Baine, there was a note indicating that the whole timber required for piece work was an open-ended financial commitment requiring the timber,

¹²⁵ NAS GD45/18/576-2

¹²⁶ Lauderdale obtained timbers from Bremen see J.G. Dunbar, ‘The Building-activities of the Duke and Duchess of Lauderdale, 1670-82’ pp.206.

¹²⁷ Appendix III- Panmure Timber.

...to be sawen upon my Lordes expens, That both the sd sawen
timber and nyr timber may be fitly and tymously Be laid readie
to the work...¹²⁸

That indicates that carpenters at Panmure prepared timbers on site, for which there must have been either saw mills, pits or trestles on the estate. It also implies that timber was supplied from the Panmure estate and, after being sawn into boards, it would then have been “laid” for seasoning. However, the completion of a house on such a scale could not have been successfully completed without the use of foreign timber imported from Norway, the Baltic and the Netherlands. Oak for doors and panelling was not available in Scotland, and the quality of domestic pine was generally considered inferior to imported timber for building structures. The preference at Panmure was for imported long span timbers or great trees, as the cargoes from Norway illustrated. Baine, however, purchased similar dimensioned (if not greater) domestic timber from Ross of Balnagown in significant quantities in the same decade, which may signify either a period of increased building works and/or increasingly scarce timber resources from Norway.

The timber accounts listed in the *Volume of Charges* also recorded some of the timber merchants. The first timber was purchased from Dundee in 1666 by the earl’s chamberlain John Maule,¹²⁹ and included 40 single trees, 77 double trees, 14 long double trees and 12 great trees, costing £218 18 08.¹³⁰ In summer 1668, large quantities of baulks were purchased from David Johnston of Arbroath who purchased his timber from several merchants in the town; Patrick Wallace, Alexander Peter and James Martin. Johnston supplied £435 worth of timber including 178 double trees costing approximately £200; other items included single trees, nine and twelve ell beams and 600 deals.¹³¹ Single trees cost 10 shillings, approximately half the price of double trees which cost between 18 and 24 shillings per piece, probably indicating a difference in the thickness of the trees. Twelve ell beams cost 19 shillings, and nine ells ten shillings (the same

¹²⁸ NAS GD45/18/622

¹²⁹ It was quite usual to employ a close relative in such positions and the Earl of Strathmore employed David Lyon as his factor at Glamis during the 1680s.

¹³⁰ NAS GD45/27/128

¹³¹ Appendix III- Panmure Timber.

price as single trees, probably implying the same length); deals cost £200 in total. The account included additional costs for “casting and wailing [the] timber ...” which referred to the selection and handling of the timber for Panmure itself, suggesting that specific dimensions and quantities had been required.¹³² Figure 66 presents a summary of the different categories of timber bought for Panmure, demonstrating the diversity and complexity of timber required for building construction and finishing work. Nine main types are evident, however including sub-categories a total of 21 were identified.¹³³

Summary of timber (by type) purchased for Panmure 1666-1673		
TIMBER CUT	QUANTITY	TOTAL COST £ Scots
Deals - ordinary, thick, fine	8009	3701
Double trees - long	398	529
Great trees - ordinary, great, small	164	739
Trees - fir, 22 foot, 27 foot	404	1227
Knapholt - ordinary, great, great long, small	1054	909
Wainscot - ordinary, deals, short	451	1456
Planks - oak, 15 foot	518	837
12 ells (approx. 26')	38	36
9 ells (approx 18' 6")	30	30
		9464

Figure 66: A summary of timber purchased for Panmure showing the diversity of timber cuts purchased and showing that in this case, both ells and feet were used for the acquisition of timber.

“Trees” referred to timber baulks used for long span timbers such as principal joists or beams, similar to the cargoes of the two ships that brought roofing timbers for Panmure from Norway in 1668. The Fraserburgh ship the *Good Hope* skippered by John Middleton arrived at Dundee in March 1668 to deliver 60 trees 27 feet in length (plus their cuts, which may refer to any pieces trimmed at source from the baulks), 129 trees of 22 feet and twelve score (240) of 15 foot planks. In June 1668 the *Rising Sun* of Leith skippered by Henry Fraser arrived at Dundee with 100 “great tries” 27 feet in length, 130 trees 22 feet in length (“sixteen cuted shorter to severall lenth”) and 100 planks of fifteen feet. The total cost for these roofing timbers came to approximately £2,251, considerably more expensive than those bought for Panmure from Arbroath where a 22 feet tree cost approximately 30 shillings a piece and 27 feet trees cost £5. The higher prices could indicate that the timbers imported directly from Norway were pre-

¹³² Wailing, handling or selecting, in Pride, *Glossary Scottish Building*, p.80.

¹³³ See Appendix D, Volume 2, pp 409-411 for complete account of timber purchased for Panmure.

fabricated specifically for the roof structure at Panmure, the extra workmanship for trimming timbers, framing, numbering and dismantling being included in the cost.¹³⁴

The *Volume of Charges* also included discharges in 1668 and 1670 from Francis Arneile, merchant burgess of Edinburgh and John Rodger in Dundee of payments for the supply of timber to Panmure,¹³⁵ with further accounts from John Kyd, bailie of Arbroath¹³⁶ (1672) and James Burgh (1673) a merchant in Dundee who regularly made voyages to Norway and supplied timber for Strathmore at Glamis.¹³⁷ Most of this timber would have arrived in Dundee, from where it was straightforward to transport to Panmure. The earl of Panmure's reliance on several timber suppliers also suggests that Baine was not able to provide all the necessary timber required from his timber yard at Leith. This is hardly surprising since the building works at Panmure coincided with Baine's busiest period of work at several sites, including Holyrood, Glamis and also Tweeddale's properties. In particular, the provision of timber for Holyrood may have begun to seriously impinge on Baine's stockpile.

In each year from 1668 until 1670, Baine supplied timber to Panmure, which included deals of oak and pine, wainscot, knapholt and occasionally trees or baulks. In 1668 he supplied deals, wainscot and knapholt from "ane yard to the sheip at Leith" and again in January 1669. In April 1669, approximately 1,480 deals were put by and stacked in Dundee.¹³⁸ In July 1670, he was responsible for carrying wainscot and oak deals from the yard to the boat and included costs for shore dues, probably referring to timber being brought from his own stocks at his yard in Leith to a boat for transport to Dundee.¹³⁹ Most of this timber would have been used for the interior fittings carried out by Baine and his workmen at Panmure, and implies that at this time he still had access to his own stock of good quality oak deals and boards from which he selected whatever he needed for his finer finishing work at Panmure. Occasionally, Panmure bought long span timbers from Baine, but it was probably more practical and economical for Panmure's

¹³⁴ NAS GD45/27/128

¹³⁵ NAS GD45/18/575

¹³⁶ NAS GD45/18/601

¹³⁷ NAS GD45/18/602

¹³⁸ NAS GD45/18/576-4

¹³⁹ NAS GD45/18/588

chamberlain to purchase standardised long span timbers more locally from either Dundee or Arbroath, or directly from Norway through skippers or merchants.¹⁴⁰

The total costs for timber amounted to approximately £10,000 (Scots) of which the roofing timbers alone accounted for just over 25%.¹⁴¹ There is no evidence to indicate how much timber Panmure was able to supply from his own estate, but the restrictions on felling suggested that it was of limited quality and quantity. This implies that the majority of timber used for the completion of Panmure was purchased from abroad with Norway being the primary source.

The transportation of materials to the building site often remained the responsibility of the builder or client (*i.e.* Panmure), and was a lingering feature of the direct labour system.¹⁴² In this case, Panmure's tenants provided the most efficient and cost-effective method for transporting materials, although one exception was the transport of a cargo of French glass from Dieppe, which was shipped to the nearby harbour of East Haven.¹⁴³ His tenants transported timber 15 miles from Dundee to Panmure on a number of occasions. Thirty-four tenants from Monikie brought a total of 509 deals from Dundee on 18 July 1670; and 22 tenants from Monifieth carried deals from Dundee to Panmure on 20 May 1673, carrying an average load of four deals the largest quantity attributed to one individual being eight. On the 25 June 1673, a total of 3,100 deals, together with three nine ell trees were carried from Dundee by 48 tenants.¹⁴⁴ Nor was this work restricted to male tenants, since Janet Henderson and Barbara Stephen were also named in the above lists. Most timbers were probably transported by horse, cart, or sledge, or manually pulled on sledges.

It was not only timber that was carried by the tenants to Panmure, for slates, sand and lime were conveyed in the same way. Between 5 May and 5 July 1670, 8,557 slates were transported in carts, and by 16 August a total of 15, 248 slates had been transported in this

¹⁴⁰ Appendix III- Panmure Timber.

¹⁴¹ Appendix III- Panmure Timber.

¹⁴² Dunbar, 'The Organisation of the Building Industry in Scotland during the Seventeenth Century', in *Building Construction in Scotland: Some Historical & Regional Aspects*, Scottish Vernacular Buildings Working Group (Edinburgh and Dundee, 1976).p.9.

¹⁴³ NAS GD45/27/128

¹⁴⁴ NAS GD45/18/719

manner. In October 17,598 additional slates were brought from Glentory for the new stables.¹⁴⁵
 A final 3,232 slates were received 20 October 1673.¹⁴⁶

Conclusion and Analysis

The building of Panmure was clearly a demonstration of the earl's rank within the Scottish nobility, and his house contained a number of innovative features. It was designed from the outset with a span wider than the conventional 20 feet and in a double pile format, and it was floored using the broken jointed technique. It also incorporated the first example of a semi-subterranean basement in Scotland.

The sequence of building activities, purchase of materials and employment of tradesmen emerge quite clearly from the contracts and discharged accounts. The building works with John Mylne, and Alexander Nisbet as Master of Works began in April 1666 with mason work continuing until September 1670. Baine's wright work commenced in 1668 and continued until 1675. The final fitting out of the interiors of the new house at Panmure then had to wait until 1685 for the final contract with Baine. This was agreed with a completion date of 1 February 1686, a date that coincided with the death of the third earl of Panmure.

The initial contract between the Earl of Panmure and John Mylne was not limited to mason work, but widened Mylne's professional authority to include responsibility for the "maner and forme" of the ironwork, wright work, slate work, glass work, plumbing work and plastering. As such he was originally employed as the main contractor; as an accomplished and prosperous architect, with the additional status of Master Mason to the Crown, he was in an ideal position for such a task. However, John Mylne's death in December 1667, 20 months after the work had started at Panmure meant that the organisation of the remaining building works had to be re-considered. It was quite natural for Mylne's deputy, Alexander Nisbet, to continue in charge of the remaining mason work. But unlike Panmure's earlier contract with Mylne,

¹⁴⁵ No present day location has been found for Glentory, if these were blue slates they probably originated in Perthshire.

¹⁴⁶ NAS GD45/18/726

Nisbet's contract did not extend to authority over any of the other building trades. Instead, Panmure continued the work with separate contracts for mason work and wright work. Baine's contracts were concerned only with wright and plaster work, although surviving accounts demonstrated that his function was not solely limited to these tasks, and that he also supplied other materials such as weather vanes, copper and tiles from London.

Panmure also entered into separate agreements with other tradesmen such as Charles Wilson – painter, and John Masterton – glazier, with separate accounts for other work such as iron work and slating. Costs were calculated in a number of ways: the masons and wrights were paid daily rates but the costs for floors and roofs were calculated by the square ell, and windows were charged per piece depending on size. Following the death of Mylne, the burden of administrative work associated with building works was not transferred to another tradesman or equivalent main building contractor. Instead, Panmure combined direct labour (the earlier form of building organisation) with the newer contract system.¹⁴⁷ This resulted in a hybrid of the two methods wherein the earl relied on his kinsman and chamberlain John Maule to manage the finances, supply of materials and their transport and payment of wages to tradesmen including James Baine.¹⁴⁸

This method of organisation may have been partly responsible for the ensuing disputes over accounts that arose between Panmure and Baine. As noted by Airs, a household official was capable of organising the accounts, materials and labour for the building or repairs of smaller country houses.¹⁴⁹ John Maule's experience of building work probably related to much smaller scale works that concerned minor repairs and modifications to properties on the estate. However, Panmure was a building project of some scale and complexity, and the loss of the highly skilled and experienced Mylne as main contractor and architect meant that there was probably less co-ordinated control of the different trades precisely at the point when it was required. The fact that Baine's 'extras' were often related to work concerning other trades seems

¹⁴⁷ Airs, *The Making of the English Country House 1500-1640* pp.46-52.

¹⁴⁸ NAS GD45/27/128

¹⁴⁹ Airs, *Making of the English Country House*, p.46.

to support this. It also suggests that Baine found it difficult to estimate prices for work and materials accurately, and that this may have been due to his own inexperience working as a contractor on a major building scheme. Baine's promotion to His Majesty's Master Wright whilst working at Panmure may have also motivated him to pursue the Panmures for prompt payment of his accounts. The building works at Holyrood were just starting under Sir William Bruce, and Baine needed capital for this venture both to maintain his timber stocks and to pay his men. His actions regarding payments from Panmure (and also later Strathmore) seem to substantiate the arguments put forward in his many petitions to Parliament in the 1690s concerning the raising of capital for the Crown works and his subsequent pleas for the reimbursement of money owed to him.¹⁵⁰

The contracts between Panmure and Baine agreed, as was common, that Panmure would both supply and transport the timber, although very little appears to have been supplied from the estate itself. As a timber merchant Baine could have monopolised the supply of timber to Panmure, but did not do so since his employment did not prevent local merchants from Dundee and Arbroath supplying timber as well. Two cargoes came directly from Norway with timbers that were probably ordered specifically for the roof structure at Panmure. These timbers, and those generally provided by local skippers and merchants, were long span timbers with a particular emphasis on the width of baulks and also deals for planking and sarking *i.e.* pine; further evidence that local merchants were trading directly with Norway. Although Baine did supply some long span timbers for Panmure, for the most part he supplied oak timber such as *knapholt*, wainscot boards and deals from his timber yard at Leith. However, Baine's simultaneous involvement with the Crown works at Holyrood, and the properties owned by Tweeddale and Strathmore, meant that the timber he had stockpiled in readiness for use in prospective building works may have been rapidly exhausted. This may have been a factor in his decision to source long span timber from the Balnagown estate to maintain his stocks in 1674.

¹⁵⁰ RPS,1695/5/219. Date accessed: 9 May 2008.

Despite Baine's disagreements over payment for extras and his exaggerated claims as to the excellence of his workmanship, he was clearly at the peak of his career whilst working for Panmure. His appointment as king's master wright acknowledged him as the foremost master wright in Scotland, giving him access to the credit necessary for his continued success, and advancement from wright to main contractor. Panmure was Baine's first prestigious undertaking for a member of the Scottish nobility where his primary role was restricted to that of master wright. Shortly afterwards, Baine was employed by the earl of Strathmore for the building works at Glamis, where his increasing status, wealth and ambition encouraged him to take on the additional responsibilities of main contractor.

CHAPTER 10: GLAMIS CASTLE, ANGUS

The Castle of Glames, Earl of Strathmore's speciall residence in the shyre – a great and excellent house, re-edified, and furnished most stately with everything necessare – with excellent gaites, avenues, courts, garden, bowling-greens, parks, inclosures, hay meadows and planting, very beautiful and pleasant...

John Ochterlony, *Account of the Shire of Forfar circa 1682*

Whilst the Earl of Panmure oversaw the final building phases of his new house, his nephew Patrick, 3rd Earl of Strathmore and Kinghorn (designation combined 1677, previously known as Earl of Kinghorn) started work to rebuild and modify his properties at Huntly and Glamis, both of which had fallen into severe states of disrepair through damage and neglect. Born in 1642, Patrick succeeded his father in 1646 at a very early age and inherited the huge burden of his father's debts. Until he came of age his uncle, the Earl of Panmure, provided Strathmore with sound guidance on financial and other estate business; on one occasion preventing his "utter ruin" at the hands of the Earl of Morton.¹ On graduating from St. Andrews University in 1659 he resolved to restore both his family's dignity and financial standing. He married Helen Middleton, daughter of John Middleton, 1st Earl of Middleton,² in August 1662 and initially they lived at Castle Lyon, formerly known as Huntly, but re-named after the family name.³ During his father's time Castle Lyon had been the family's summer residence and Glamis had been occupied in the winter. This was a practice Patrick planned to adopt, but first there were some very necessary repairs and improvements to be carried out both at Glamis and Huntly.⁴ His initial building works from c.1660 to 1670 concentrated on making Castle Lyon

¹ Patrick Lyon, 1st Earl of Strathmore, 1642-1695. *The Book of Record*: a diary written by Patrick first Earl of Strathmore and other documents relating to Glamis Castle, 1684-1689, A.H. Millar (ed.) *Scottish History Society* 9, (Edinburgh, 1890) pp.24-28.

² Lord High Commissioner of the Parliament of Scotland 1661-1663.

³ McKean, *Scottish Chateau*, p.27.

⁴ Strathmore, *Book of Record*, p.35.

habitable for his family; once this was accomplished he turned his attention to Glamis, "...the ancient seat of my family..."⁵

Building works carried out at Glamis from 1669 to 1695 have previously been outlined by Michael Apted⁶ and Harry Slade.⁷ Apted's paper essentially covered the building works undertaken by Alexander Nisbet the mason at Glamis from 1671 to 1695, and focused on the later decorative work and the artists who were involved with the work. He briefly referred to James Baine being present at Glamis during the 1670s and considered work by Baine as King's Master Wright as unusual, and suggested that in general the earl employed local craftsmen whenever possible. However Apted did not recognise that Nisbet was also from Edinburgh, and had been apprenticed to John Mylne. Apted's assertion regarding Baine and other craftsmen will be explored further using additional documentary sources to assess how extensive Baine's role was and his relationship with the other trades employed at Glamis.

Slade's research was also largely concerned with Nisbet's work at Glamis, which he dated further back to 1669, and then continued his examination of the building works from 1679 to 1695, again paying little attention to the preceding ten years when Baine had been involved at Glamis. Slade, like Apted, was unaware that Nisbet was an Edinburgh mason who had trained with John Mylne, and neither fully addressed Baine's role in the development of Glamis during the 1670s. However, new research into Baine's work at both Glamis and Castle Lyon between c.1668 to 1678⁸ demonstrates that Baine's role at Glamis extended far beyond his work as a wright, supplying Strathmore with a wide range of skills, materials, construction services and finished products.

Strathmore had an overall scheme of improvements in mind that he wanted to carry out at Glamis, but due to his financial constraints he chose to undertake these works 'with little

⁵ Strathmore, *Book of Record*, p.37.

⁶ M.Apted, "The Building and other Works of Patrick, 1st Earl of Strathmore at Glamis, 1671-1695", in *The Antiquaries Journal*, Vol. 66 (London, 1986) pp.91.

⁷ H.G. Slade, *Glamis Castle*, (London, 2000).

⁸ Strathmore Muniments Box 148, Bundle 1: transcribed by Dr Mary Young, University of Dundee (unpublished). See NRA855/148/1/37

noice and by degrees and more to pleas and divert my selfe then out of ostenta^{ne}...’⁹ The building works were therefore undertaken in a piecemeal fashion over a roughly 26 year period, coming to an end with the death of the 3rd earl in 1695, by which time Strathmore had succeeded in returning his estates and finances to a more profitable position. From his *Book of Record*, we know that Glamis was in a dismal state of repair, and many of the ancillary buildings of the inner and outer courts had been ruined or destroyed by English soldiers garrisoned there in 1660.¹⁰ Before Strathmore made any changes he wisely made a

skame and draught of my whole project, for unless men so doe they will infallibly fall into some mistake, doe that w^{ch} they will repent ymselves afr, and be obleided to pull their own worke downe againe...¹¹

Essentially Strathmore intended ‘...to order my building so as the frontispiece might have a resemblance on both syds....’¹² To achieve this balance, his building scheme required the re-orientation of the building to the south-west, heightening of the east wing and building a new west wing to create a balanced facade, with the addition of a new block at the rear of the original house incorporating a chapel and charter room. Strathmore’s draft also included a landscaping scheme that required the removal of the former outer and inner courts, and their replacement with a new back court. At the same time he devised a new formal entrance to the house through a series of gates and formal gardens.

The earl’s first undertaking was to demolish many of the older buildings of the inner and outer courts surrounding the house, which he believed, were “...a strange confused unmodel’d piece of business and was to me a great eye sore...” and “...worn quyt out of fashione...”¹³ Figure 67 illustrates the building and landscaping scheme undertaken by Strathmore showing the new inner court (A) and back court (B). In order to create a balanced facade, Strathmore realigned the entire complex of buildings at Glamis from facing south-east¹⁴ to facing south-

⁹ Strathmore, *Book of Record*, p.42.

¹⁰ Ibid., pp.18-19.

¹¹ Ibid., p.40.

¹² Ibid., p.41.

¹³ Ibid., p.39.

¹⁴ Ibid., p.38.

west towards a distant hill with a standing stone.¹⁵ To achieve a balanced facade, he extended the footprint of the building horizontally, which was further emphasised by creating an entirely new landscape surrounding Glamis. It included a series of formal entrance gates, the Satyr Gate (not shown in Figure 65), the Gladiator Gate (I), and a principal entry with gatehouses leading to the entrance court with formal gardens, sundial, fountain, statues and a bowling green (D). These three gates and the formal entrance with walled enclosures can be seen in the background of the painting of Strathmore (Figure 76).

¹⁵ This was probably the Glamis Pictish cross slab, since moved from its original location and now found on the north edge of Glamis village, almost due south of the castle. With thanks to Paul Brockbank for help in locating the stone's current whereabouts: grid reference NO 3858 4686. Further information at www.canmore.rcahms.gov.uk/en/site/32067/details/glamis.

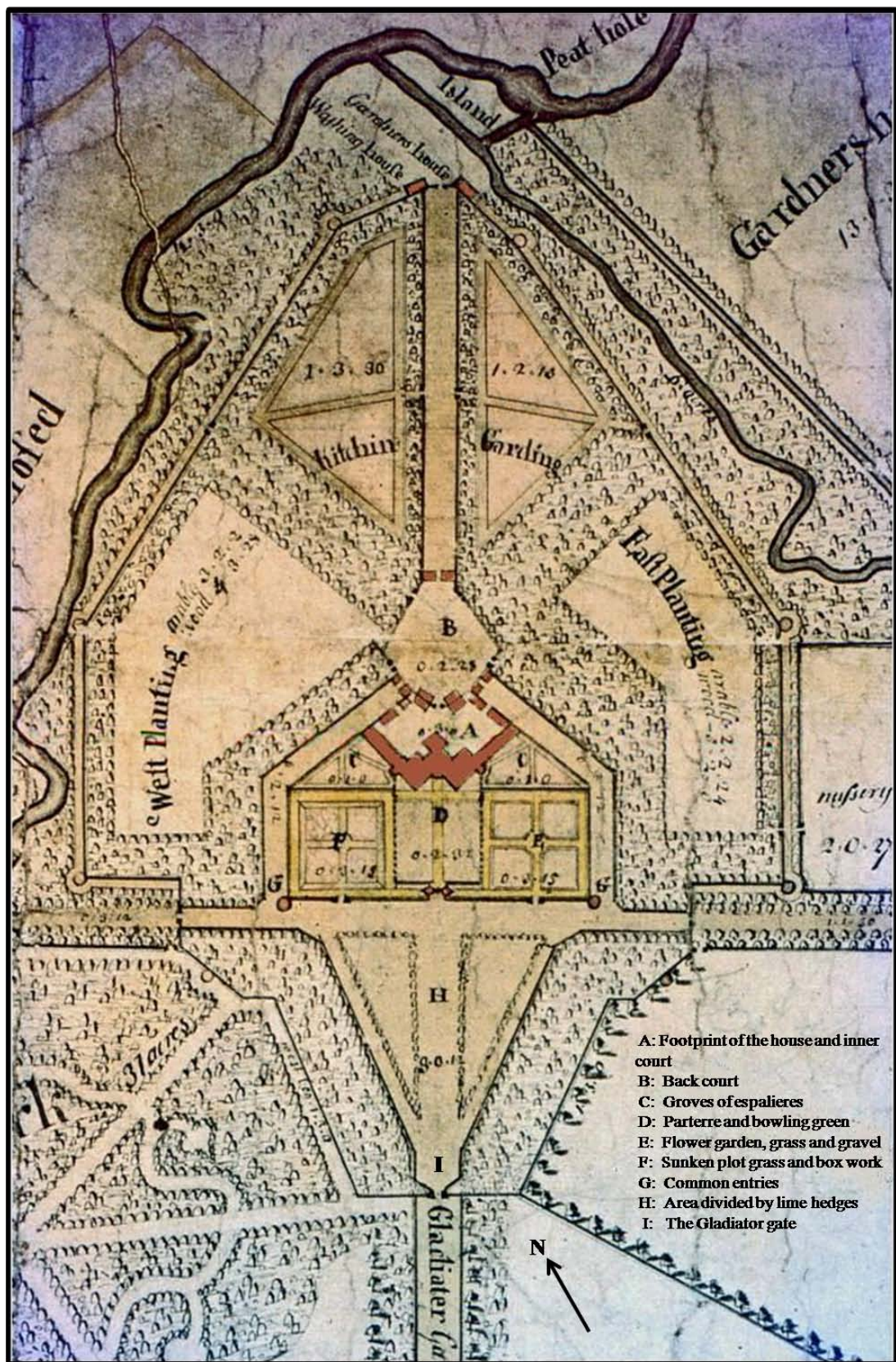


Figure 67: Although not exactly as it would have appeared in the 1680s, Thomas Winter's plan of Glamis estate from 1746 illustrates the third earl of Strathmore's overall design: the re-alignment of the house, his horizontal extension of the building creating a balanced facade, a new inner court and back court within a landscaped setting, and a formal progression through a series of gateways leading to the entrance. Before reaching the Gladiator Gate (I) visitors would have passed through the Satyr Gate not shown here, and the final entrance gate to the fore court was flanked by gate houses, see also Figure 76.
Photograph: © Earl of Strathmore.

Strathmore's improvements at Glamis were likely to have been influenced by his association with his uncle's new house at Panmure with its balanced facade, wealth of windows and twin bastions, and where, on a number of occasions, he bore witness to the contracts and agreements with the craftsmen employed there.¹⁶ Thus not only was Strathmore already familiar with the procedures involved when employing craftsmen and contractors, but he also observed their work *in situ* at Panmure. The evidence of his subsequent agreements with a number of the same craftsmen suggests that Strathmore approved of both their skills and working practices, despite his comments that suggest otherwise,

...I never judged it worth the trouble of a Convocatione of the severall Artists, such as Messons, whos talent comonly lyes within the four walls of a house; wrights, for the right ordering of a roofe, and the finishing of the timber work within....¹⁷

He employed a number of the same high status craftsmen that had been working at Panmure, including James Baine, his Majesty's Master Wright, and Alexander Nisbet, mason burgess of Edinburgh and former apprentice to John Mylne the King's Master Mason and architect of Panmure.¹⁸ Strathmore, like many of his contemporaries, also engaged some of the prominent foreign craftsmen who had originally come to Scotland with the duke of Lauderdale for work at Holyrood Palace. Strathmore, however, chose *not* to employ Scotland's leading architect Sir William Bruce. This decision may have originated in a protracted law suit that arose between the men over property and finance causing Strathmore to describe Bruce as "...a contentious and teuch lawer [who] will be verie troublesome...."¹⁹ Instead he undertook the role of architect himself, preferring to devise, draw up and implement his own designs for the improvements at Glamis, modestly claiming that since he had no desire to create a grandiose edifice to be admired by others he did not require the services of an architect;

¹⁶ GD 45/18/566-1; contract with John Mylne 28 February 1666.

¹⁷ Strathmore, *Book of Record*, p.42.

¹⁸ Perhaps Strathmore would have employed John Mylne as architect if he had not died in December 1667.

¹⁹ *Ibid.*, p.29. Disputes between the two men concerning the feuship of Kinghorn in Fife (see NRA 855/26/3/5-40 and 28/9/1 and 6; 29/5/10; 31/5/10, 19, 25) and Bruce's purchase of his Kinross estate from the Earl of Morton, see Wemyss, 'Aspiration and Ambition' p.82-83. Amongst the Strathmore Muniments there is also a reference to a bond of 2000 merks that Strathmore borrowed from Sir William Bruce in 1676 (not transcribed, so no further information) NRA 855/ 30/7/3.

for I thank God I...never Judged anything of my owne small endeavours
worthie to make so much noice as to call for or invit to either of my houses
sk^d [skilled] publick Architecturs...²⁰

Despite Strathmore's apparent refusal to employ an architect, he later invited John Slezer the Dutch military engineer and architect²¹ (and overseer of Lauderdale's building works at Thirlestane and Lethington) to make a sketch of Glamis. This was to be for Slezer's publication *Theatrum Scotiae*,²² the first illustrated study of Scotland's buildings and towns. According to Strathmore this was to include '...all the Kings Castles, Pallaces, towns and other notable places in the Kingdome belonging to privat subjects...and who himselfe [Slezer] passing by deemed this place worthie of the taking notice of.' Strathmore happily paid Slezer with 'liberall money' for Glamis to be drawn, suggesting that he neither underestimated his own building accomplishments, nor the value of employing a skilled engineer and draughtsman such as Slezer.²³ Unfortunately the sketch and plans of Glamis did not feature in the final published version of Slezer's work, and only the copper- plate engraving of the 'frontispiece of the Castle of Glamis' survives (Figure 68).

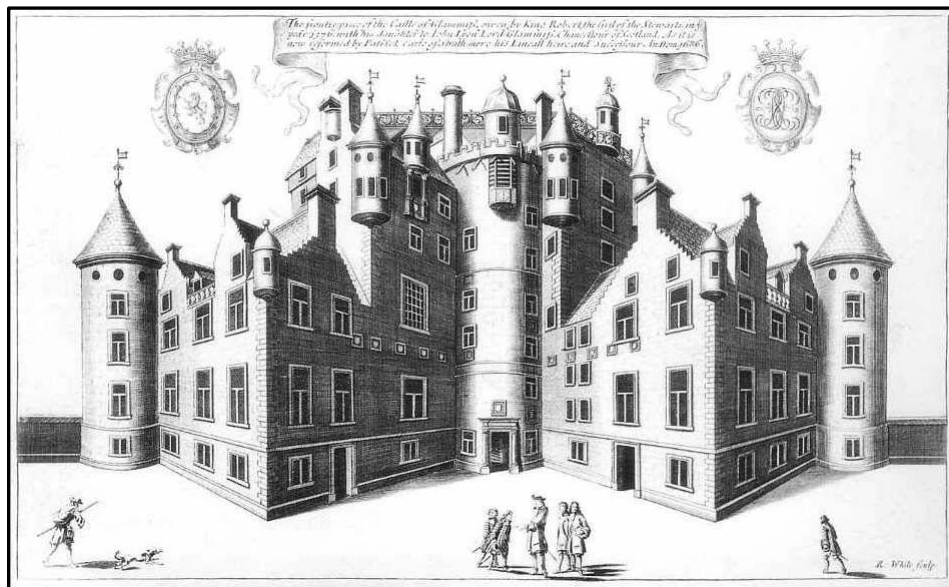


Figure 68: John Slezer's copper engraving of Glamis 1686. Crown Copyright/RCAHMS.

²⁰ Strathmore, *Book of Record*, p.40-42.

²¹ He held both the office of Chief Engineer for Scotland and that of 'Surveyor of his Majesties Stores and Magazines', <http://www.nls.uk/slezer/biography.html> accessed November 2009.

²² John Slezer, edited by J. Jamieson *Theatrum Scotiae, with a life of the author, and large additional illustrations*, (Edinburgh, 1874).

²³ Strathmore, *Book of Record*, p42. Also see Slade, *Glamis Castle*, Appendix B by John Dunbar who suggests that Slezer may also have given Strathmore architectural advice at Glamis, pp.110-111.

Building works 1669-1670

Strathmore's priority was to first make Glamis reasonably comfortable to accommodate his family. They moved there in the winter of 1670 and occupied the fourth storey '...of the old house which is on the top of the great staircase, for that storry was only glazed att that time.' The earliest known contracts, relating to building work at Glamis date between May and August 1669, were made with Alexander (Sanders) Nisbet, Andrew Low (slater), and James Baine²⁴, all of whom were working nearby on the main house at Panmure, then nearing completion. In June and August 1669, Nisbet received the final part payments for his task work there, indicating that he was now available for work at Glamis.²⁵

The work started by Nisbet in May 1669 involved repairs and modifications to the south-east wing, probably in preparation for Strathmore's family. Nisbet's initial task concerned the roof of the east wing where he 'highted the walls of the great round and erected two new litle geivels on the syd wall making out more lights in the second and third storry.' This part of the house was to be for the use of Strathmore's wife, children and the 'wemen servants...of the best account',²⁶ Strathmore's own rooms were to be in the new west wing and this work was described in Strathmore's *Book of Glamis*, wherein he drew attention to the '...platform goes off the fourth story, and is of great convenience and use to us who live for the time in this syd of the house.'²⁷

Masonry work on the east wing undertaken (probably also executed by Nisbet in 1670) at a cost of approximately £300,²⁸ also included the construction of a flat roof for a viewing platform fronted with eight balusters that was to be erected between two new gables added to the side wall with one "antik face". Additional windows and chimneys were to be built and arranged in a balanced manner with any nearby chimneys raised level with the new ones. A new stair (Figure 69) was to be built up to the top storey with a door. At the same time "the old great

²⁴ Baine is also recorded working for Strathmore in an account summarising work over the ten year period 1668 to 1678, NRA855/148/1/37.

²⁵ GD45/18/27/128

²⁶ Strathmore, *Book of Record*, p.38.

²⁷ Ibid., p.38.

²⁸ NRA855/148/1/32

chimney” was taken down and its vents closed off, as was a window on the second storey of the round.²⁹

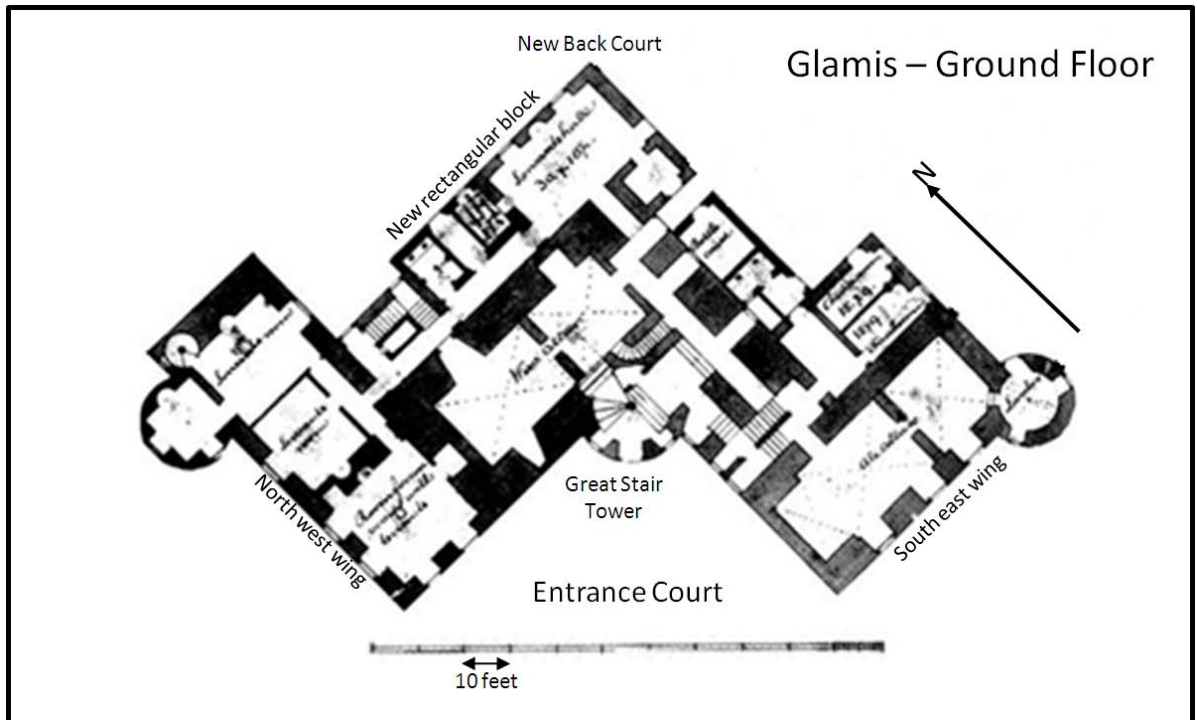


Figure 69: Ground floor of Glamis Castle, adapted from proposals to extend the castle c.1765.
© Strathmore Estates.

A second contract with Nisbet in August 1669 specified a new wing equal in breadth, length and roundness to the south east wing to be erected against the west gable of the Great Tower, terminating in a bastion at its northern end.³⁰ In addition, a range of office houses was to be built, with a new scale and platt stair between the great tower and this new building work on the north-west. This wing at the north-west of the original tower corresponded with that on the south-east, generating Strathmore’s desired balanced façade (Figure 67). Ten years elapsed before Strathmore entered into an additional agreement 1679 with Nisbet for further work on the new wing against the west gable. The contract stated that part of this work had been ‘already founded’³¹ and that Nisbet was to finish the work. However it also stipulated demolition and alterations to be made to the earlier work.³² In particular it specified structural modifications to

²⁹ NRA855/148/1/32

³⁰ Slade, *Glamis Castle*, p.38-39.

³¹ Apted, ‘Buildings and other works of Patrick, 1st Earl of Strathmore,’ p. 95.

³² Slade, *Glamis Castle*, p.38.

be undertaken within the existing building to allow access between the new and old elements via stairs and doorways. For example, the stair platform or landing leading to the Great Hall was to be made the same level as that room's flooring.³³ Significantly, at the north of the old house, Nisbet was to build a new rectangular block on the north-east corner containing a charter house and chapel above (Figure 69). The Chapel was to be '...founded wt ane equall breedth wt the back staire case...' ³⁴ However, Nisbet's implementation of this instruction led to a major disagreement. In 1683 Strathmore accused Nisbet, amongst other accusations of overcharging, of making the chapel six feet wider than the staircase (Figure 67 shows that it is indeed wider than the stair) and the resulting dispute led to Nisbet's removal from the work at Glamis.

In August 1669, Strathmore also signed an agreement with Andrew Low, a slater from Arbroath for the slating of new buildings, barns and houses both at Glamis and "Huntlie" or Castle Lyon. Low was to supply all the necessary materials for his slating work; nails, wooden pins and ropes for the ladders. In addition two of his men were to visit the quarry, possibly at Carmyllie, on 9 August to "dight the sklaitis". At Glamis they were also to re-use slates taken down from the round tower "near to the sylled (ceiled) hall ther" and to install the "riging stone" or ridge stone³⁵ of the whole work that was to be slated.³⁶ Further payments and memoranda related to slate work carried out by Low at both Glamis and Lyon were made in 1671 and 1672. In 1670 work done on "the round upon the east end of the east work" cost 100 merks, plus six bolls of good oat meal,³⁷ which implies that by this time, both of Strathmore's properties must have been more or less fully roofed and weatherproof. Thereafter the volume of slate work decreased accordingly.

Baine was certainly working at Glamis in 1669,³⁸ and his appointment by Strathmore coincides with the beginning of the busiest period of his career, just prior to his appointment as His Majesty's Wright. There were several advantages for Strathmore in appointing Baine to

³³ Apted, 'Buildings and other works of Patrick, 1st Earl of Strathmore,' p. 96.

³⁴ Ibid., p.96.

³⁵ "rigging stone" - Rigging: ridge of roof sometimes roof itself, see Pride, *Glossary Scottish Building* p.64.

³⁶ NRA 855/148/1/63

³⁷ NRA855/148/1/70

³⁸ NRA855/148/1/34 and NRA855/148/1/42

work for him. He was already an accomplished wright and wealthy timber merchant and conveniently working close by at Panmure for Strathmore's uncle. It was not necessarily Baine's ability to supply timber that was the main benefit for Strathmore, who on several occasions sourced building timbers from Norway himself, aboard his vessel the *Lyon*. Baine's considerable wealth however, as his subsequent role in the building works at Holyrood bears out, would have been a valuable asset for someone in Strathmore's relatively impecunious position. For by employing Baine as his main contractor at Glamis, Strathmore gained access to credit for the supply of materials and services via Baine's reputation and business interests in the building trades.

In 1669 Baine was busy with work on Panmure's great stair, as well as undertaking work for the earl of Tweeddale at Neidpath Castle in Peebleshire, and at the earl's lodgings in Edinburgh. His work for Strathmore, however, may actually have pre-dated them, for a document dated 1669 specifying the numbers of doors and windows to be made or repaired by Baine was described as an amendment to an earlier "first Contract".³⁹ This has yet to be discovered, but implies that Strathmore either began his improvement works at Glamis earlier or had employed Baine previously at Castle Lyon.⁴⁰ An earlier date for the start of work at Glamis is also supported by a separate summarised account covering the ten year period from 1668 to 1678, which lists the wright and plaster work undertaken by Baine and his men at Glamis, and verifies that Baine started work one year earlier at Glamis in 1668, coinciding with his first contract at Panmure.⁴¹ This suggests that Strathmore was probably directly influenced by his uncle's choice of craftsmen there, resulting in his employment of not only Baine as main contractor, but also Nisbet and Low. There is thus the possibility that Strathmore may have employed Baine first, before his uncle.

The purpose of the building work initially executed by Baine was to make Glamis habitable for Strathmore's family. It was focused primarily in the south-east wing that they were

³⁹ NRA855/148/1/34

⁴⁰ NRA855/148/1/34; there is also a document which lists work carried out by James Baine at Glamis which is dated 1668 to 1678 and repeats most of what is recorded in NRA855/148/1/44.

⁴¹ NRA855/148/1/37

going to occupy, as well as several rooms elsewhere - including the hall and drawing room.⁴²

The first contract with Baine dated 1669 related to the provision of twelve doors and ten windows (both refurbished and new) to make the building secure and weatherproof, and to lining fifteen storage closets with either timber or plaster. The earl supplied 700 deals and 60 trees for seven of these closets; Baine was to supply the rest of the timber, iron work and locks. A second contract that year specified timber work for a variety of rooms including the kitchen, cellar, latter meat hall and chamber, new ante-chamber, bed chamber, the old ceiled hall and chamber, and an unnamed room described as being 45 feet long (possibly a chamber in the east wing on the same floor as the great hall); and for various items of furniture and fittings that Baine was to provide or make including tables, bedsteads, seats, shelving, and box-beds, doors (internal and external) and windows. It also covered structural work such as joisting 'the plat of the scal stair' (probably the new stair erected between the the great tower and the new west wing), inserting storm windows⁴³, bridling and sarking the roof, laying flooring and plastering two storeys.⁴⁴

Several accounts for timber and other materials which correspond with these works date from 1669 to 1670.⁴⁵ Timber for the roofing work included 500 scaffolding deals and 500 deals for flooring, which, from their price, were obviously of a better quality than the cheaper scaffolding deals. The flooring deals cost £44 per hundred, whereas those for scaffolding cost only £30. An additional 100 twelve ells beams @ £1 04 per piece, and 100 nine ells @ 13 shillings 4d per piece were presumably used for joisting and rafters. Only length was recorded, and their lengths suggest that the timbers were Norwegian, since these were the most favoured dimensions imported from Norway to Dundee. Similar timber bought for Panmure had been marginally cheaper, where nine ell beams cost ten shillings, twelve ell beams cost 19 shillings and 600 deals cost £200.⁴⁶ Eighty pieces of wainscot at five shillings per piece concluded the

⁴² Strathmore, *Book of Record*, pp.37.

⁴³ "stormeings"- Storm window, dormer window, see Pride, *Glossary Scottish Building* p.74.

⁴⁴ NRA855/148/1/42

⁴⁵ NRA855/148/1/60

⁴⁶ NAS GD45/27/128

Glamis account for timber; probably good quality timber used for doors or lining of partition walls. This first account for timber came to £956 13 04. During the following year, in 1670, when Strathmore and his family moved to Glamis, more significant quantities of roofing timbers, joists, and deals for flooring were purchased, including 40 pairs of great joists (£4 per pair), 60 lesser joists (£2 13 04 per piece), 100 twelve ells (no price); 350 sarking deals (£34 per 100), 500 deals (£34 per 100) and an additional 500 flooring deals with no price recorded.⁴⁷ These materials were probably also required for repairing the south-east wing and raising the great round or bastion in that part of the house in readiness for occupation by the family.

Baine was not only providing timber at Glamis; he also supplied glass costing £132, 58 chalders of lime at £484, 50 stones of iron costing £61 and two iron weather vanes and globes in the period 1669 to 1670.⁴⁸ So Baine's initial function at Glamis was clearly quite similar to his contractor role at both Panmure and at the properties belonging to the earl of Tweeddale. At all these properties he was responsible for furnishing timber, providing supplies of additional building materials such as lime and glass for the glazier, slates for roofing, as well as undertaking plaster work, and wright work that included furnishing his clients with functional items of furniture.

Building Works 1672-1674

In 1672, a contract for mason, wright and plaster work was agreed between Strathmore, Nisbet and Baine for further work at Glamis.⁴⁹ In contrast to their earlier individual contracts with Panmure, which were for much larger scale works with more detailed specifications for the two separate trades, at Glamis both men were to work together. As well as having worked at Panmure, they had also worked together in August 1666 extending a tenement building in

⁴⁷ NRA855/148/1/60

⁴⁸ NRA855/148/1/60

⁴⁹ NRA855/148/1/83

Edinburgh for Thomas Wilson.⁵⁰ Both men were members of Mary's Chapel, where in 1671 and 1672 Nisbet was also deacon of the masons.

Their contract for work at Glamis initially suggests that they were considered as equals, as neither Nisbet nor Baine were individually titled as Master of the Works or overseer. Nisbet was, however, to 'serve James Baine In any maner of thing relating to the worke belonging to a masone though their omitted....' indicating that in this respect Baine had superiority over Nisbet. According to the contract, each man was to provide the other with whatever was required of timber or mason work according to their trade. Nisbet was responsible for removing any masonry rubble and for repairing any damage that occurred during his work to stone steps or pavements. Baine was to provide any timber required by Nisbet for scaffolding or vaults (*pending*); he was also free to dispose of or re-use the old joisting, flooring, iron grates from windows and old door locks.

Nisbet's principal task was to construct a vault, and the walls of the chambers above were to be raised and have their floors re-laid, hence the reference to "old" joists and flooring that Baine was to receive and dispose of or more probably recycle. The nature of this task would certainly have required close cooperation between Baine and Nisbet and the grounds for a combined contract. The remainder of the work specified in the contract was either wright or plaster work. For Baine, this concerned finishing the principal rooms with plaster and timber work such as flooring and panelling; the hall and withdrawing room were mentioned in particular, beneath which Nisbet constructed his vault. The work contained in the 1672 contract was to be completed by November 1674, and was to be to a 'sufficient standard', for example the joists and deals were to be adequately seasoned. Strathmore had perhaps learnt something from his uncle's dealings with tradesmen and the subsequent problems related to poor quality materials and workmanship at Panmure. Strathmore had probably also taken heed of the accounts presented by Baine to Panmure for payment of work that he had completed, but was

⁵⁰ RD2/17 p.448-451

not contracted to do.⁵¹ In his agreement with Baine and Nisbet, there were two mentions of work to be carried out “though their omitted”, suggesting that any work necessary to finish the work as designed by Strathmore was to be carried out, even if it had not been itemised in the contract itself – at no extra cost. This unusual clause, not found in other building contracts, implies that Strathmore was at liberty to make any changes to his plans at any point during the building works, with all the costs for such changes being absorbed by his contractors. The 1677 contract for Gallery House contains a more common and pragmatic proviso, which states that,

... in caice any parte of the building shall happen to be altered from the said draught by consent of both parties, the samen shall not interferre any further payment then the pryce under wri[tte]ne.⁵²

Thus any changes or additions would be agreed first between client and contractor in order to prevent any additional costs to the contractor; Strathmore’s contract terms were quite unreasonable and contained no such allowance for alterations or contingency for mistakes in his own drafts. The total cost for the work described within this contract was not stated, nor were the financial terms for penalties, which would have included failure to complete the work on time, using sub-standard materials and poor workmanship.

Strathmore made specific references in the contract to work that he knew both men were already well acquainted with or had performed themselves, in particular Baine’s wright and plaster work at Holyrood and Panmure. Baine may have still been working on the plaster work at Panmure at the time, since there is an agreement dated June 1672 for “rich fruit work” plaster for the rooms of the principal storey of Panmure. Baine was to plaster the hall and withdrawing room at Glamis in the same manner as the “...Roume outwith the bed chamber is in the Abbay [Holyrood].” Secondly, he was to line the walls and windows of the hall with “...timber bound worke as the parlour of Panmure.” The ‘hall’ specified here was probably the great hall. Further

⁵¹ The second Earl of Panmure died 24 March 1671 and shortly afterwards in April 1671 Baine presented Panmure’s widow with an account for work done which was not in the contract. See GD45/18/588.

⁵² Dunbar, ‘Building Contracts’, p.298.

instructions were for “...a large Bowell⁵³ in the wall upon the east side for holding of Glasses”. The withdrawing room was probably a new room being built as part of the new state apartment on the principal floor of the west wing. These chambers were described in a 1712 Inventory as being located beyond the Great Hall comprising of the “High Dining Room, the Withdrawing Room, the fine Bed Chamber containing the state bed and finally the closet of the fine bed chamber”.⁵⁴ The description of timber work for the windows in the withdrawing room stipulated that they were to be lined with bound work, again illustrating that these were high status apartments, hence the referral to specific examples at Holyrood and Panmure. The ceilings were to be plastered with a cornice and frieze in the same manner as the *Scarlet Chamber*, again specification by reference, but this time based on work already existing at Glamis. In contrast, Baine was to plaster “plaine the latter meat hall and roume aff it...” the lettermeat hall being the dining chamber for members of the household (Figure 70).⁵⁵

Timber work described in this contract included new doors and partitions including one of “plaistered timber” with hinges on the door (placed in the centre of the partition) so that it could be dismantled and probably function as a screen. Baine was also to make (or supply) bedsteads and tables for two household chambers above the hall, as well as locks on all the doors with one key for all of them.

⁵³ ‘bowell’ – bole small recess or cupboard in the wall of a building. G pride, *Glossary of Scottish Building* p. 24.

⁵⁴ Slade, *Glamis Castle*, p.52, and pers. comm. with Charles Wemyss regarding location of the state apartments during the third Earl’s lifetime.

⁵⁵ McKean, *Scottish Chateau*, p.63, 197, 264

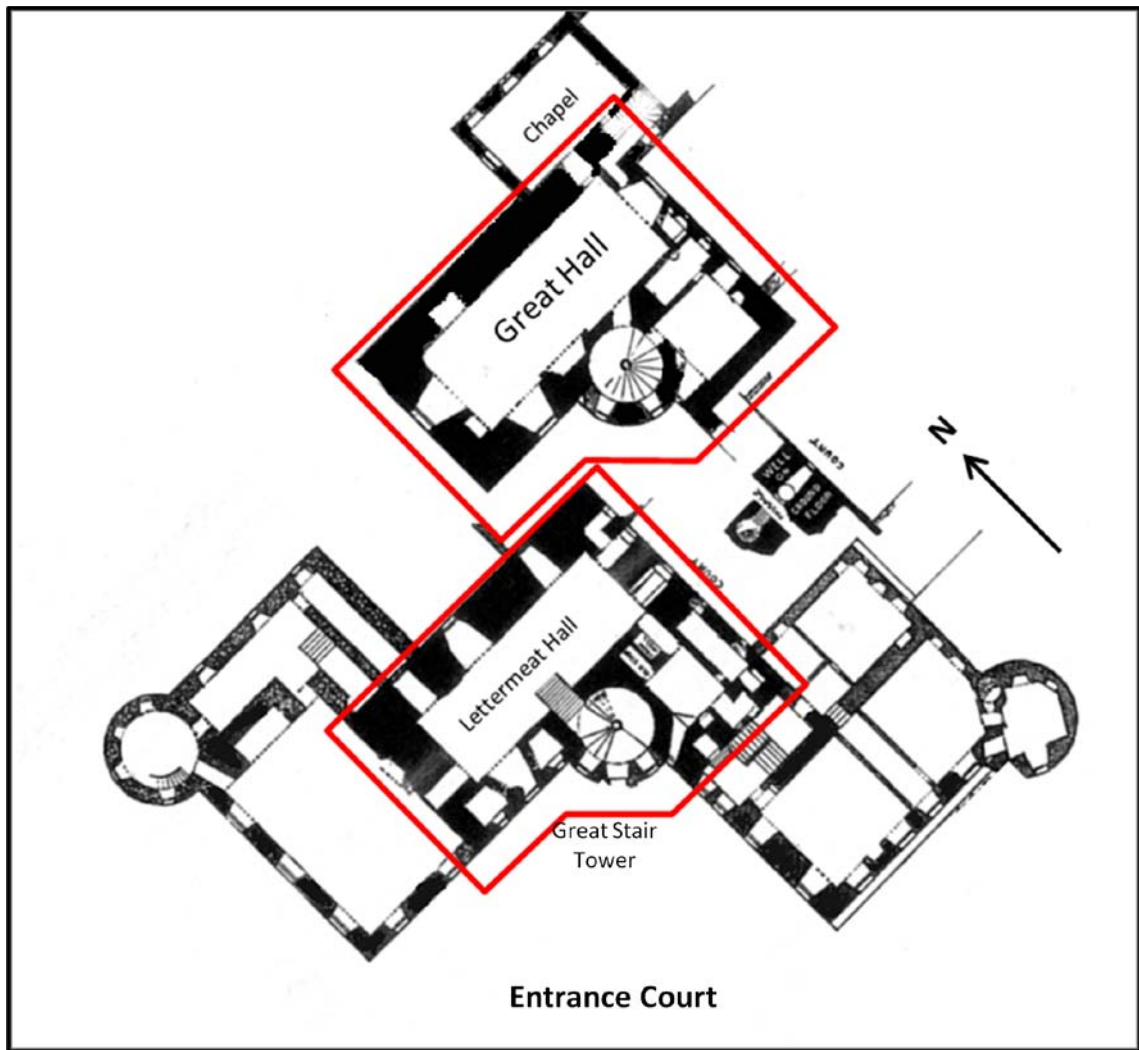


Figure 70: The second and third stories of Glamis showing the location of the Lettermeat Hall and the Great Hall above. Adapted from McGibbon and Ross.

The contract with Baine specified the new windows - ten in all 'after the best and newest model....'⁵⁶ The newest type of window at that time was the sash window,⁵⁷ and unknown in Scotland in 1672. Could Strathmore have been specifying sash windows?

The earliest recorded use of sash windows in Scotland has been dated to 1673/4, first installed at Lethington, East Lothian, one of the houses that belonged to the Earl of Lauderdale. In the previous year, 1672, Lauderdale had also installed sash windows at Ham House near London, using the Dutch wright, Mathias Jansen.⁵⁸ Some earlier examples of sliding windows or sashes already existed in England at some of the royal residences, including Somerset House

⁵⁶ NRA855/148/1/83

⁵⁷ Dunbar, "The Building-activities of the Duke and Duchess of Lauderdale, 1670-82" in *Archæological Journal* Vol.132 (1976) pp.219.

⁵⁸ *Ibid.*, pp.219.

(1661-63 and 1664-5) and St. James Palace (early 1660s).⁵⁹ Strathmore later employed a number of the same craftsmen, painters and woodcarvers⁶⁰ that Lauderdale had employed at Ham in addition to his Scottish properties.⁶¹ It is therefore entirely possible that Strathmore may have been influenced by Lauderdale's installation of sash windows and considered having them installed at Glamis. The engraving by Slezer executed in 1686 (Figure 68) certainly shows that the principal window on the south east facade appears to be a sash-type window at Glamis; it has 30 panes of glass (5 x 6).

The type of window design commonly found in Scotland at this time, however, had hinged shutters in the lower part and fixed glazing in the top part of the window apertures, similar to those shown on Isaac Miller's drawing of Hamilton Palace (Figure 71). Rather than sash windows, it seems more likely that Strathmore was specifying a new type of casement window; his description of 'double casements from top to bottome' suggests this, implying casement windows that were glazed the full length and breadth of the window aperture. This agrees with his later specification that windows on the north '... are to be made fitt only for glas and no brod....'⁶² This kind of window was already used in England, but sometimes only opened on one side.⁶³

⁵⁹ Louw, H. and Crayford, R., 'A constructional history of the sash-window c.1670-c.1725', Part One, in *Architectural History: Journal of the Society of Architectural Historians of Great Britain*, Vol.41 (1998) pp.99.

⁶⁰ The Kickius family of painters; the Dutch painter de Wett and Dutch woodcarver Santvoort.

⁶¹ Dunbar, 'The Organisation of the Building Industry in Scotland during the Seventeenth Century,' p.11: Dunbar, "Building Activities of the Lauderdale's 1670-82", pp.211 .

⁶² Apted, "Building and other Works at Glamis, 1671-1695"; p.96.

⁶³ Louw, H. and Crayford, R., 'A constructional history of the sash-window c.1670-c.1725', Part One, in *Architectural History: Journal of the Society of Architectural Historians of Great Britain*, Vol.41 (1998) pp.177.

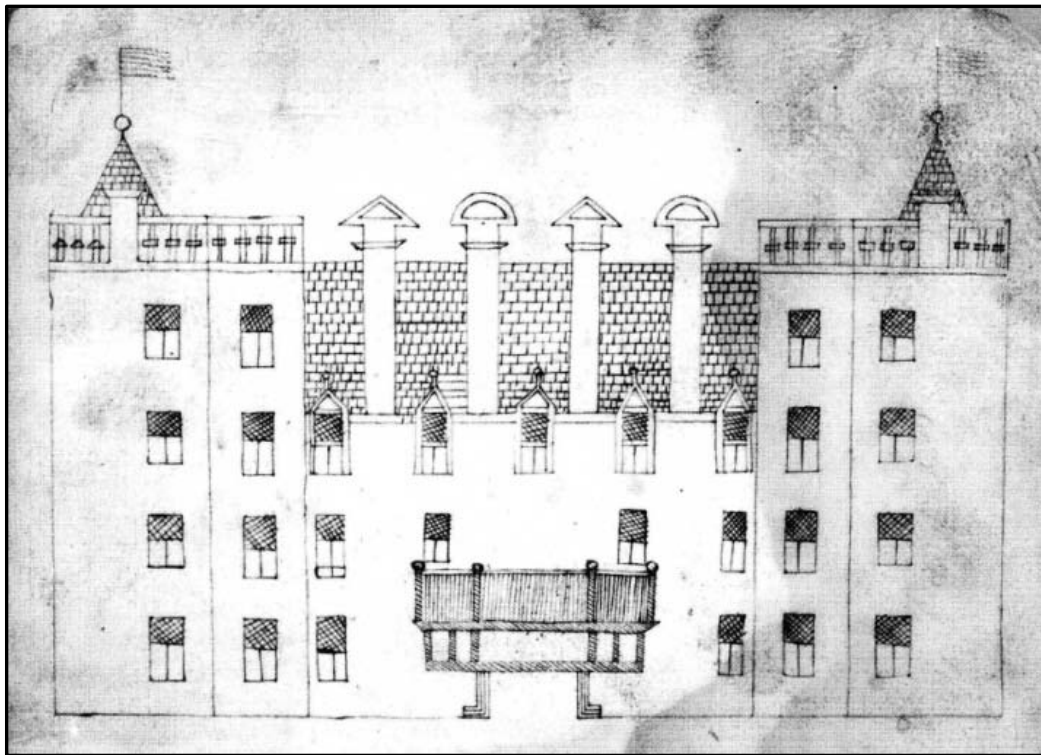


Figure 71: Drawing of Hamilton Palace c.1677 by Isaac Miller a draughtsman and carpenter⁶⁴: the windows have wooden shutters below and a fixed framework of glass lozenges above. © Crown Copyright/RCAHMS.

However, Strathmore specified “double casements”, perhaps to indicate that both sides could be opened. If this was the case, then these windows probably conformed to a design devised by Roger Pratt, whose windows were made with the larger and more desirable French *Normandy Squares*⁶⁵, i.e. glass panes of 7”x 5”. These were set into a lead lattice fixed to the hinged iron window frame; contrasting with the former pattern of smaller diamond/lozenge shaped panes. The lower mullion was also omitted as a further improvement to allow more light into rooms (Figure 72A). At Ham House there still exists this type of double folding casement window without the lower mullion (Figure 72B).⁶⁶ Similar windows may have also been installed at Holyrood during the improvements carried out in the 1670s and a painting dated 1720 illustrates windows that are similarly glazed: the upper part of the window is fixed and the two lower casements are glazed and appear to be hinged (Figure 73).

⁶⁴ Millar is thought to have been a carpenter, related to a Quaker family employed as gardeners by the 3rd duke and duchess of Hamilton. See www.scran.ac.uk accessed January 2010.

⁶⁵ J. Turnbull, *The Scottish Glass Industry 1610-1750*, PSAS Monograph No. 18, (Edinburgh, 2001), pp.52-56. Normandy glass was also known as crown glass and often preferred to either Scottish or English glass.

⁶⁶ Louw and Crayford, ‘Constructional history of the sash-window’, p.176.

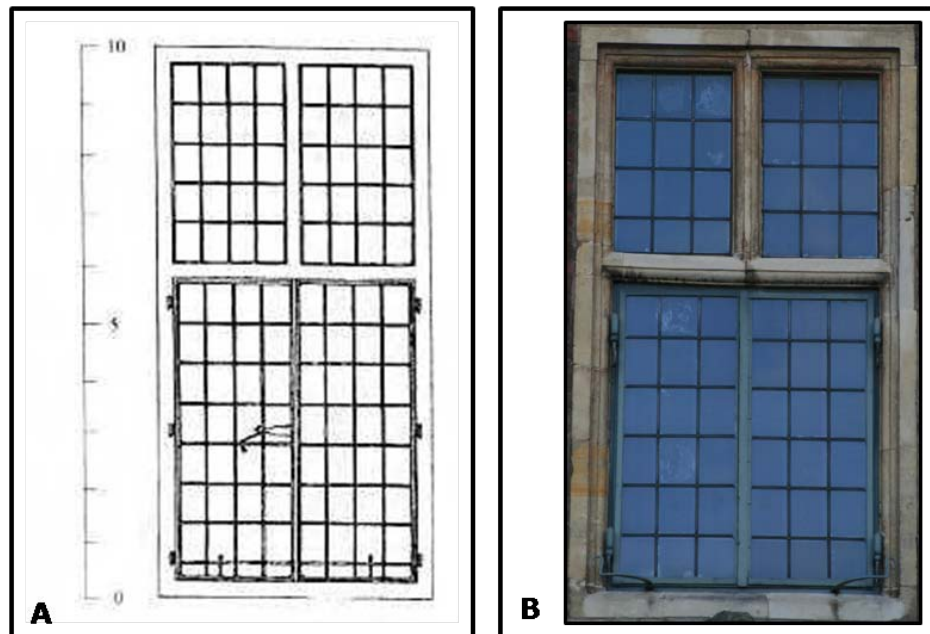


Figure 72A: Folding casement window, with Normandy glass squares. Adapted from Louw & Crayford.
 Figure 72B: Folding casement window at Ham House. Photograph: author 2009.

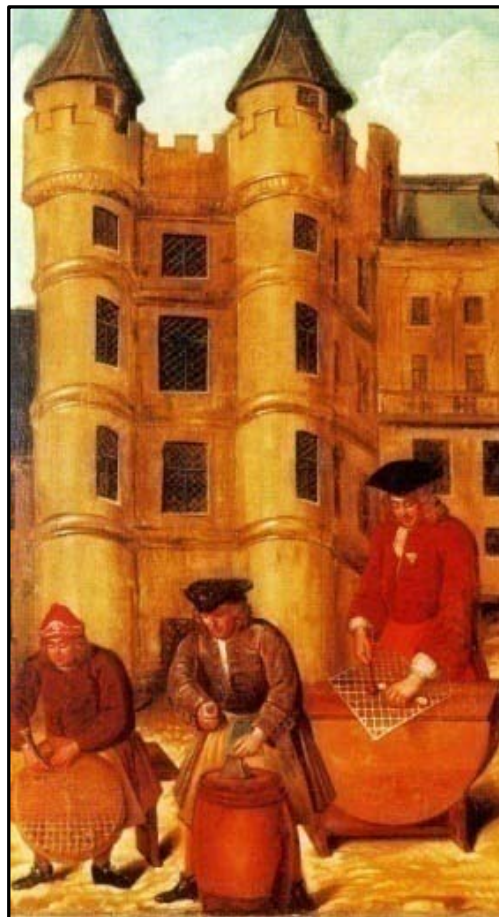


Figure 73: Detail from *The Trades of Edinburgh* by Roderick Chalmers, 1720. The windows illustrated here at Holyrood are similar to the surviving double casement window at Ham House and probably the same as some of the new windows installed at Glamis.

By October 1673 the window frames at Glamis were ready for glazing by William Anderson, a glazier from Dundee. Anderson was to carry his ‘crills [creels or cradles] of glass’ from Dundee and remain at Glamis until the work was completed, re-using old glass as well as new.⁶⁷ He signed an agreement with Strathmore to glaze all the windows at Glamis for £300, plus board and lodging for himself and his men. There was no indication as to whether this glass was of Scottish, English or French origin, although Strathmore would have been aware of the better quality glass available from Normandy as it had been used at Panmure in 1668, and was the most suitable glass for glazing double casement windows.⁶⁸

Based on a petition that Baine made to Parliament in 1694 regarding the non-payment of accounts, he worked for Strathmore in 1672, 1677 and 1680.⁶⁹ We now know from a summarised account of work that Baine and his men were probably involved at Glamis as early as 1668⁷⁰ and further evidence indicates that he worked both there and at Castle Lyon throughout the 1670s.⁷¹ However, new accounts for the period 1673 to 1677 also confirm that Baine operated as main contractor, providing Strathmore with a service that extended beyond that of wright and plasterer. Most of the accounts were undated, and therefore may not be in chronological order; but they provide an insight into the wide variety of skills and knowledge that a main contractor was expected to have and additional services provided.

A 1673 account of work done by Baine at Glamis related to some of the work outlined in the contract agreed with Nisbet and Baine in 1672, and scheduled for completion by 1674. The ‘Item for mendeing the mane rooffe of the new work’ and ‘making the great pavillione roof’ probably referred to the new wing built against the west gable and cost £440. In the same account wright work for joisting and flooring, inserting partition walls, making doors, a stair and baluster cost £360.⁷²

⁶⁷ NRA855/148/1/31

⁶⁸ NAS GD45/18/27/128

⁶⁹ Apted, “Building and other Works at Glamis, 1671-1695”; p.94.

⁷⁰ NRA855/148/1/37

⁷¹ NRA855/148/1/44

⁷² NRA855/148/1/44 , p.1.

Several other roofs constructed during this period included the stable block built on the south-east of the back court, where wright work included sarking for the roof, joisting and flooring, partition walls, doors, windows, mangers and hay racks. Domestic offices, bake house and brew house were all joisted and floored using approximately 100 feet of joists, and furnished with partitions. In the entrance court, two pavilions or summer houses that stood at the corners of the bowling green and garden were also roofed, floored and furnished with windows and doors, as were the two gatehouses.⁷³ Separate accounts for Norwegian timber from Baine dated 1674, 1676 and 1677 are evidently related to this roofing work, with itemised long span timbers described as ‘fiftie great joists’ at £3 per piece; deals for sarking and flooring ‘four hunder thik druntoune (Trondheim) daill’ at £54 per 100, and 400 cheaper deals from Trondheim at £27 per 100.⁷⁴

Baine’s men, however, were also recorded ‘cutteing of the Couples of the roof’ and ‘hewing and layeing of the jests’.⁷⁵ This indicates that instead of ordering specific dimensions, pre-shaped and framed from Norway such as at Methven or Panmure, the roof timbers at Glamis whilst sourced in Norway, were more probably shaped and framed on site. This difference may have been due to Strathmore’s lack of familiarity with the standard sizes of roof spans and timber products, but was more likely to have been a consequence of building around and making adjustments to a pre-existing building.

A whole range of other timber items were also central to the building works at Glamis, and furthermore, illustrate the increased significance and use of timber in late seventeenth century building works. Essentially these items were the windows, doors, furniture and fittings. The following examples show the volume and diversity of work undertaken by Baine and his men. Evidently, at the same time a clearer understanding of the type and quantity of timber required also emerges.

⁷³ NRA855/148/1/44 , p.9.

⁷⁴ NRA855/148/1/44 , p.5.

⁷⁵ NRA855/148/1/44 , pp.6 and 8.

At Glamis, sixty casement windows were to have *brods* – shutters. Most of these were new windows, but the account includes some windows and shutters to be repaired. Repairing two ‘old’ casements and their broads came to £2 10, and four window casements were replaced and their shutters repaired for £18. The costs for new work varied from £1 for a pair of plain pine shutters for the kitchen to £6 for each of the fourteen new casement windows with shutters.⁷⁶ A further 20 windows were to have “window caises with broads of firre and lined with wainscoit one the outsyd” - pine shutters, lined with oak on the outside.⁷⁷ In this instance, wainscot probably referred to high quality oak that was more robust and weatherproof than pine for the exterior of shutters, implying that these window casements were of the more traditional type with glass above and wooden shutters below. There were clearly different types of windows used for high and low status rooms; a difference that would have certainly been obvious from the outside. In addition, windows would have been a further means for achieving Strathmore’s much desired balanced facade at Glamis.

Thirty two doors were completed, most for the main house; the kitchen, larder, cellar, ceilinged chamber, wardrobe, pavement chamber and for entering the garden and the leads. The doors for the wardrobe and cellar were made with giblet-checks allowing these doors to close flush with the wall, a type of door fitting also used for concealed doors made to match the surrounding wall finish (such as wainscot panelling).⁷⁸ Internal doors for the house averaged approximately £3 each. Exterior doors were generally made from oak and interior ones from pine, and the door opening out onto the leads specified as wainscot was thus indicative of its status. A further eight doors were made for the office houses, and one great door and two double doors were made for the stables, plus one half door to the barn.

Whilst working at Panmure, Baine appears to have only assembled and repaired furniture. However, at Neidpath, he supplied furniture for the earl of Tweeddale, and he

⁷⁶ NRA855/148/1/44 , p.2.

⁷⁷ NRA855/148/1/44 , p.3.

⁷⁸ Giblet door – door fitting, when closed, flush into wall. See also Giblet check - check in stone surround to door to allow door, when in closed position to be flush with the wall, *i.e.* the outer face of the door will be in the same plane as outer face of the wall, in Pride, *Glossary of Scottish Building*, p. 43.

undertook a similar role at Glamis. Strathmore commented in his *Book of Record* that he had hardly any furniture at either of his houses. Following his marriage he had gradually furnished Castle Lyon, but had refrained from transporting furniture between Castle Lyon and Glamis to prevent it from being ruined. Once they had acquired proper furniture at Castle Lyon, they then took any pieces that were surplus to their requirements over to Glamis when they moved there in 1670 ‘... as new beginners’ with very little furniture.⁷⁹ Strathmore would have required the best furniture available for furnishing his ‘ancient family seat’ and employing Baine – the most prestigious wright in the country – to provide furniture for Glamis, was a guarantee not only of high quality, but also status.

Twenty nine tables were made for Glamis, seven made from wainscot @ £4, others for the kitchen, the women’s house and for his son Lord Lyon from pine on average costing £3. A billiard table (not priced) was also provided. The table for the bakehouse was to be ‘two daill lenth’, which if it had been sourced from Ryfylke in Norway, would have been 16 feet long. Three wainscot tables were intended for the *Great Dining Room*, three for the *Ceilinged Chamber*, and one for the *Paved Chamber*. Wainscot timber for making furniture included in cargoes from Norway in 1674 and 1677, were described as ‘great long wainscot’, and cost £16 per piece: a total of £80 for five pieces. A further 86 pieces of short wainscot were also supplied by Baine from his yard at Leith, and cost £5 per piece. Four pieces of knapholt were recorded as part of the Norwegian cargo of timber, and if the same as the knapholt imported to Panmure, could also have been used for making furniture. Two clock cases cost £12, there were five stools or forms, but only one chair was furnished by Baine “Item for making billie Patricks chaire [£1]”,⁸⁰ indicating that Strathmore acquired chairs elsewhere.

Some furniture and furnishings were bought by Strathmore either from Edinburgh – where he acquired a fine cabinet for his bed chamber and a large looking glass for the drawing room⁸¹ – or from London during his visits there.⁸² Earlier he had imported furniture from London

⁷⁹ Strathmore, *Book of Record*, pp.37.

⁸⁰ NRA855/148/1/44, p.2.

⁸¹ Strathmore, *Book of Record*, p.95.

for Castle Lyon and its interior was considered to be 'verry fashionable' furnished with amongst other things, Russia leather chairs and ten upholstered chairs.⁸³ Baine's furniture-making skills (and those of his men) appear restricted to more functional or traditional items of furniture, although these would have been high quality pieces. Neither chairs nor cabinets were included as essay pieces at Mary's Chapel, and this may have been due to constraints imposed on the craft wherein newcomers with new skills, techniques and products were often treated quite ruthlessly.⁸⁴ By 1695, there were still only three wright upholsterer members at Mary's Chapel. Although cane chairs were in great demand in the seventeenth century their popularity being reflected in the numbers recorded in inventories from Scottish houses, they were not produced in Edinburgh until the 1690s, and were usually imported from London. That was until William Scott, deacon of the wrights from 1692 to 1694, was granted a Royal Warrant to manufacture cane chairs; he had already supplied twelve cane chairs to the earl of Panmure in 1691 altogether costing £51 (£4 07 06 sterling).⁸⁵ He was also the first wright to call himself a cabinet-maker; and the same William Scott was responsible for building and operating Edinburgh's first sawmill in 1695.⁸⁶

Baine may not have provided Strathmore with fine chairs, but he did furnish Glamis with 25 beds; six curtain beds @ £5, seven fixed beds, five box beds @ £3 and seven of unspecified type. The box beds would have been built-in or used as room partitions and were possibly ornamented with classical orders, similar to the essay pieces executed by apprentices at Mary's Chapel. Other furniture fitted by Baine's men at Glamis included shelving in her ladyship's study, and also the pantry. The pantry shelving cost £1 10, whereas her ladyship's shelf came to £3, probably indicating better quality materials and finer workmanship. He also provided 'ane greatt press in the wardrop with bund faulding leaves and scalfes' an aumbry or cupboard in the cellar and a fixed aumbry in the kitchen, plus four great granaries.

⁸² Ibid., pp.30-32 and p.91.

⁸³ McKean, *Scottish Chateau*, p.244.

⁸⁴ Pryke, 'Eighteenth Century Furniture Trade in Edinburgh' p.16-17.

⁸⁵ NAS GD45/18/986

⁸⁶ Pryke, 'Eighteenth Century Furniture Trade in Edinburgh,' p.89.

The diversity of a wright's skills was further illustrated by the manufacture of a range of tools and utensils by Baine's men at Glamis: yarn winders, bread chests, buckets and pails for collecting ash, a sweetmeat box and a poor box. For the other trades working at Glamis, he provided "filliteing and flanker boards" for the slater,⁸⁷ "hooks and beatters with shoos"⁸⁸ for plastering, harps and sieves, and axle trees for carts. Baine also provided ladders, and made and erected scaffolding for the masons, for example when they installed windows on the platform and Strathmore's coat of arms, as well as for the plumber James Adam, for work on the lead platform.⁸⁹

There was less evidence concerning metalwork at Glamis than there was for Panmure, but there are some similarities. At Panmure, Baine had provided six copper globes and weather vanes, whereas he supplied "four great Copper thea[u]ns [vanes?] and four great Copper globes gilded with Inglish gold...." at Glamis in 1674.⁹⁰ The globes and vanes cost £148 *i.e.* £37 each. Panmure's had been cheaper at £120 (*i.e.* £20 per vane plus globe) in 1668, so perhaps those Strathmore required were either larger and/ or the price of copper and gilding work had increased significantly. Baine was clearly able to source and supply very high quality products. At the same time he was also responsible for supplying ironmongery work such as iron hooks and gentries for hanging meat in the kitchen, window and door *bands* – hinges and locks. His men are recorded in 1675 as 'putteeing one the Irone work through the hous....'⁹¹

Baine also supplied building materials for the slater and plumber. When he despatched the Norwegian roofing timber with the copper weather vanes and globes to Glamis, he also sent slates and 832 stones of lead. Between 1674 and 1676, Baine supplied a total of 17,000 blue slates to Strathmore, which he had bought from the earl of Menteith. Three consignments of

⁸⁷ "filliteing and flanker boards" –fillet: (a) Small flat sectioned, sometimes moulded strip of timber used to separate different portions of larger mouldings, act as a cover plate or infill piece. (b) Narrow flat band on moulding or shaft. (c) Tiling batten, i.e. strip of sawn timber to which tiles are nailed or hung; flanker (a) Side projection of wall, roof etc. (b) Lead gutter where pitched roofs meet at an angle; valley. See Pride, *Glossary of Scottish Building*, pp.39 and 40.

⁸⁸ 'hooks and beatters' - implements for mixing plaster; shool –shovels.

⁸⁹ NRA855/148/1/44 , pp.1-3.

⁹⁰ NRA855/148/1/44 , p.5.

⁹¹ NRA855/148/1/44 , p.7.

slates amounted to £744 plus £72 for transport by ship.⁹² In a separate contract of 23 August 1676, Menteith had agreed to supply Baine with 15,000 blue slates, which were probably intended for the roofs at Glamis.⁹³ These slates would have originated in Aberfoyle, part of Menteith's estate (as recorded on Herman Moll's map 1714).⁹⁴ The slate quarries there are part of the slate belt running along the Highland Boundary Fault and being close to the River Forth would have been relatively easy to transport to the east coast.⁹⁵ Lauderdale had used the same blue slates at Thirlestane in June 1671 and at Brunstane September 1673; although at Lethington he used the heavier Carmyllie slates.⁹⁶ Blue slates had a much higher status and were considered as finer (lighter and easier to shape) than those used previously at Glamis and Lyon in 1669 by Low, who had quarried the slates locally for the barns and houses.⁹⁷ These were probably the Carmyllie slates made from heavy sandstone flagstones quarried in Angus, which had been used at Panmure.

Baine was clearly at the height of his career, and able to provide an extensive range of high quality products and services, many from other craftsmen, for Strathmore's building works. However, Baine was not responsible for providing the finest pieces of furniture such as chairs, cabinets or mirrors, nor did he source fine furnishings such as arras hangings for Glamis. These were some of the more personal items that Strathmore clearly preferred to buy himself on visits to Edinburgh and London. An inventory, dating from 1686, describes the vast quantities of furniture and furnishings bought by Strathmore - it includes nearly 300 chairs and over 30 rooms with wall hangings.⁹⁸

⁹² NRA855/148/1/44 – p.5.

⁹³ NAS GD220/5/1840

⁹⁴ National Library of Scotland, H. Moll, I. Bowles and T. Bowles, [originally published 1714, this edition ca. 1726?] (London, 1726).

⁹⁵ Baine regularly purchased blue slate from Menteith's quarries; in December 1677 there is an instrument of protest from Baine regarding an earlier contract with Menteith who should have supplied slate to James Stirling an "...indweller in Leith on behalf of James Baine...wth blew skailzie of his best quarrel 29 Sept last..." NAS GD220/6/1818

⁹⁶ Dunbar, "Building Activities of the Lauderdale 1670-82", pp.202-230.

⁹⁷ NRA855/148/1/63; Pers. Comm. Geologist Paul Brockbank - there are no documented quarries suitable for slates near Castle Lyon (Huntly) on the north bank of the River Tay, west of Dundee. Both the *slate belt* quarries along the Highland Boundary Fault and the flagstone quarries at Carmyllie are some distance from Huntly. It is possible that similar rocks to those used at Carmyllie outcrop nearby and several disused quarries are marked on Ordnance Survey maps to the NW of the house.

⁹⁸ Wemyss, 'Aspiration and Ambition', Part Two, p.97 and p.166. NRA855/255/7/2.

At the same time that Baine was contracted for the building works at Glamis, he was working simultaneously at Strathmore's other property, Castle Lyon. Strathmore first began his reworking of the tower there during the mid-1660s shortly after his marriage. To follow on from his father's earlier modifications to the roof and outer court, Strathmore determined to create a more comfortable and fashionable summer residence for his family at Lyon. To make the house more convenient, he extended the house to make a nursery, cut out a number of vaults, inserted new floors, added two new stairs, and created larger rooms by thinning walls in the principal rooms, with added windows and a panelled interior. Strathmore also created a bowling green and garden with statues and two summer houses.⁹⁹ Baine's known work at Lyon included new windows for seven studies measuring 6'x 3', three further windows with wainscot casements and broads, flooring for at least seven chambers, lining of the seven studies with plain pine, and ten door pieces and six chimney pieces. However, since Baine was responsible for work totalling £9,650 undertaken at Castle Lyon during the 1670s, it would have included much more than described here.¹⁰⁰

At Glamis, Baine was commissioned to undertake the plaster work, but to date no accounts or descriptions have been found. He was also responsible for the plaster work at Lyon where more documentary detail has survived. Here the kitchen and ceiling of the turnpike stair were to be plastered, as were the seven studies – albeit only with a plain ceiling and cornice. The ceiling of the *Drawing Room* was to be done in 'fruit work' and the *Great Dining Room* was also to have,

rich froott work of the richest fassione with ane great Cornthiane
Cornice done in the ritchest order with ane ritch coatt frise and architrave
conforme to the order.¹⁰¹

This work would have been similar to surviving plaster work in the dining room (hall) at Kellie Castle in Fife and also Dundee interiors from the same period.¹⁰² In August 1672, Baine

⁹⁹ McKean, *Scottish Chateau*, pp.243-244.

¹⁰⁰ There is evidence to suggest that his work there may have started at Lyon in 1668, which was the same time he started work at both Glamis and Panmure - NRA855/148/1/33.

¹⁰¹ NRA855/148/1/44, p.11 and NRA855/148/1/38

¹⁰² See www.dundeecity.gov.uk/lawson/index.htm for the Charles Lawson Collection, Dundee Central Library.

was to undertake the plaster work in the principal rooms at Panmure also in fruit work, based on drawings produced by Baine himself. Perhaps Strathmore specified a similar decorative scheme, and if moulds had been used, benefited from re-using those made earlier for Panmure, and/or from the skills of the same craftsmen.

Baine was also responsible for furnishing all the timber, nails, glue, glass work and iron work. One substantial piece of timber, a six feet long and fourteen inches square oak brander¹⁰³, was required to carry the stone wall of a new study.

As the main contractor at Castle Lyon and Glamis, Baine had authority over other trades and craftsmen. His control over them is illustrated by an account for extras presented to Strathmore in May 1677 described as being ‘...over & besyde the Aggreement & for furnishing thereto’,¹⁰⁴ which itemised glazing work undertaken by John Masterton (His Majesty’s Master Glazier) at Castle Lyon, noting that the work was done “by direction of James Baine.” Baine also sub-contracted William Smith for iron work that cost £94, and Robert Walker of Edinburgh for iron work costing £121. According to the strict terms of the contracts Baine had agreed to, Strathmore was not obliged to make payments for any additional work undertaken at Glamis. However, perhaps the extent of the extra work carried out had exceeded Baine’s own finances to such a degree that he was then left with little choice but to claim it back from Strathmore, leading to an unavoidable dispute over payment.¹⁰⁵

It was not only Baine’s finances that were being overstretched during the 1670s. Baine was in high demand, not only with work for Strathmore, Panmure and Tweeddale, but also for the Crown building works at Holyrood to a degree that would almost certainly have exhausted the number of trained wrights available for work. Baine’s engagement at Holyrood alone required considerable numbers of men, and probably employed all the available Edinburgh wrights (see page 144). At the same time, Baine required several men operating at the properties belonging to Strathmore, Panmure and Tweeddale. In order to have sufficient numbers of

¹⁰³ ‘brander’ – crossbar or framework in any kind of structure, gen. now applied to strips of wood to underside of ceiling joists. G. Pride, *Scottish Glossary of Building*, p.26.

¹⁰⁴ NRA855/148/1/39

¹⁰⁵ NRA855/148/1/38

trained men on site at Glamis, he appears to have sourced and trained local men. Four named wrights employed by Baine worked at Glamis: Andrew Wright, James Carr, Robert Alison and Robert Forrester. Their names are not included on the membership roll at Mary's Chapel, which suggests that they were local Angus men. Baine, however, was recorded as having two servants also named Andrew Wright and James Kerr, pronounced Carr, who had been amongst five of Baine's servants in Edinburgh accused of assaulting a fellow member of Mary's Chapel in 1673. The three other men were found guilty and forced to leave Edinburgh, but Wright and Kerr received no mention in the verdict. Perhaps if they were not citizens of Edinburgh they had remained in Angus to avoid prosecution.

Baine's men Robert Alison and Robert Forrester were at Glamis from January to March in 1673, and for a further sixteen weeks up to January 1675. Most of their work during 1673 was concerned with less high quality work: furnishing stables with fixed beds, hay racks, mangers and trevies and some repairs to the east wing. During 1674 to 1675 their work included shaping roof timbers and flooring joists, erecting the roof timbers and sarking, sawing laths for plaster work, putting up cornices, making partitions, laying and repairing floors, making doors (and hanging them), casement windows with shutters, beds, tables, stools and chests.

The first phase of work at Glamis was more or less finished by 1676, when Strathmore recorded that he had '...gott all the old house glassed of new and the most parte of the roums plenished on[e] way or other,' and subsequently reduced the number of 'constant' workmen at Glamis to increase their numbers at Castle Lyon.¹⁰⁶

Baine's employment at Glamis and Castle Lyon appears to have ended at some point between 1678 and 1680.¹⁰⁷ There may have been a number of reasons for this. Firstly, by 1676, Strathmore had achieved most of his goals for the first building phase at Glamis: the re-orientation of the entrance front, the reparations and modification to the south-east wing and the

¹⁰⁶ Strathmore, *Book of Record*, p.41.

¹⁰⁷ Apted, "Building and other Works at Glamis, 1671-1695"; p.95. Apted noted a payment to Baine in 1680 for work at the estate church, but no further work was recorded at Glamis or Castle Lyon after 1678.

addition of various office houses, stables and furnishing the interior. Secondly, despite the precautions Strathmore had taken in the contracts with Baine, the same problems had arisen that his uncle had experienced when building Panmure - namely disagreements over non-payment for completed work and materials and claims for extra work that appear to have been justifiable.¹⁰⁸ Thirdly, Baine's departure also coincided with Sir William Bruce's fall from favour with the Duke of Lauderdale and his subsequent removal from his position as Surveyor General to the Crown. Consequent to this decision, there was a decline in the fortunes and finances of many of those associated with the building works at Holyrood, including the master mason Robert Mylne.¹⁰⁹ For Baine it signalled the virtual collapse of his business interests, since he may have been relying on his association with Bruce and the Crown works for credit, particularly once his valuable timber stocks had been given over to Holyrood. Strathmore, however, who still had finishing work at Glamis requiring completion, shortly afterwards replaced Baine with Andrew Wright, who had first worked at Panmure under Baine in 1668.¹¹⁰

Building works 1680-1692

Apted dated the first known contract between Strathmore and Wright for work at Glamis to November 1681,¹¹¹ but, the first reference to Wright working at Glamis actually occurs in a short description of work done by Andrew Wright and James Carr in the 1670s.¹¹² A separate account for £64 for work at Castle Lyon placed Wright working there in 1677, and this is the earliest evidence of him working independently for Strathmore found so far.¹¹³ Additional works carried out by Wright and his partner Alexander White at Glamis and Castle Lyon, recorded in January 1680, came to £960 for building a bridge, a roof (building not named) and

¹⁰⁸ NRA855/148/1/38 and NRA855/148/1/44

¹⁰⁹ Pers.comm. Charles Wemyss.

¹¹⁰ NAS GD45/27/128

¹¹¹ Apted, "Building and other Works at Glamis, 1671-1695", p.97.

¹¹² NRA855/148/1/44, p.6.

¹¹³ NRA855/148/1/20

wright work in the wash house at Castle Lyon.¹¹⁴ Following Baine's departure from Glamis in 1678, Wright was left in an ideal position to carry on working for Strathmore. In 1679 Strathmore also signed a new contract with the Edinburgh mason Alexander Nisbet (who was not affected by the changes at Holyrood and does not appear to have worked there) to continue with building works already started on the west wing, and for building his charter room and chapel in a new north block.¹¹⁵

A series of contracts and accounts for both wright and plaster work dated January 1680 provide the opportunity to examine the different type of relationship that Strathmore had with Wright, compared to that which he had had with Baine as main contractor.¹¹⁶ As opposed to being His Majesty's Master Wright like Baine, Andrew Wright was probably a local man from the Angus area. His main advantage over other local wrights, however, was that he had worked and trained with the king's master craftsman for at least ten years, and for the majority of those he had probably worked exclusively at Strathmore's properties.

The first agreement between Strathmore and Wright was signed on 12 January 1680. Under its terms, Wright was entitled to bed and board at Glamis for the duration of his work there, Strathmore providing all the necessary materials and workmen for plaster work; and the sum of £600 was to be paid in three instalments throughout the year, the first at midsummer. The agreement, like those with Baine, made it clear that if anything had been omitted, but which later proved necessary for the completion of the work, then Wright was to be responsible for executing that work, but that he would receive no additional payment. This unreasonable clause not only functioned as Strathmore's insurance against bills for extra costs, but also as a means for him to modify his building scheme if he felt it necessary. A penalty of 200 merks was also included for failure to complete the work described in the contract.¹¹⁷ This initial contract was not concerned with work in the main house, indicating that the structural work there was finished; instead it specified work at the gatehouses and repairs to the estate church.

¹¹⁴ NRA855/148/1/30

¹¹⁵ Apted, "Building and other Works at Glamis, 1671-1695", pp.95-97.

¹¹⁶ NRA855/148/1/15; 17; 25; 26; 28 duplicate of 17; 30 and 40 duplicate of 26.

¹¹⁷ NRA855/148/1/17 and 28; 148/1/15

Wright was to make a number of gates - including one with two leaves, a wicket at the west gate entering the park, and a gate of timber *tirlies* (lattice work)¹¹⁸ for the middle gate of the outer court. Instructions for work at a gatehouse (probably the two buildings located either side of the entrance to the Inner Court) included providing roofing couples, doors and windows, plastering the two rooms with architraves, friezes and cornices.¹¹⁹

The remaining work concerned reparations and modifications to the estate church at Glamis, in particular the family's burial vault¹²⁰ where the first Lord Glamis was interred in c.1459.¹²¹ In his *Book of Record* Strathmore described his building works at the church,

I have made a loft for my owne use and built a little addition to my burial place both w^{ch} contribute extremelie to the adornment of the church besyds three other lofts that I made therein....¹²²

Wright's workmanship included fixing wall plates, preparing and shaping joists ready for the masons and flooring. He lined and faced the walls with Corinthian pillars and moulded frames or *Mullers*; divided the loft with 'ane great square' and fixed a table in the middle. Plain benches and storm windows were built for the north loft, the pulpit removed and a void closed up; finally, further moulded frames were fixed around the burial place for hangings. Wright provided the masons with scaffolding and *coums* or wooden frames used for building arches or vaults.¹²³ Finally, he plastered in 'fyne work' a small room beside the burial place and the loft above it.¹²⁴ However, Wright's work at the church was not wholly successful, and when he charged for correcting a mistake Strathmore noted '...because he made the reeder's seat *wrong*, it is just to give him nothing for making it right....'¹²⁵

¹¹⁸ tirllass, tirlless, tirllets, tirlies, n. (a) lattice or screen consisting of crossed bars either fitting in front of a window for defensive purposes or in the form of moveable cross slits of wood fitted into window and did duty for glass, cf. Plait[wire-tirlize], (b) trellis (c) wicket or small gate. See, Pride, *Glossary of Scottish Building*, p.77.

¹¹⁹ NRA855/148/1/15

¹²⁰ NRA855/148/1/15

¹²¹ John Stirton, 'Notes on the Old Parish Church of Glamis', *PSAS* 45 (Edinburgh, 1910-1911) p.187.

¹²² Strathmore, *Book of Record*, p.45.

¹²³ Apted, "Building and other Works at Glamis, 1671-1695", p.108.

¹²⁴ NRA855/148/1/15

¹²⁵ Stirton, 'Notes on the Old Parish Church of Glamis', p.187.

Later work undertaken by Wright included the ‘east quarter of the Low Building of Glamis.’¹²⁶ Here he was concerned with flooring, plaster work, timber panelling, doors, windows, as well as make furniture and fittings. This work was very similar to that previously undertaken by his master Baine, and may well have included work that Baine had left unfinished. In particular the Scarlet Chamber on the second storey was to be made square by inserting a plaster wall and have broken jointed flooring inserted. This method for flooring was the same complicated, but strong and higher quality type of framing for floors that was Baine’s specialism. It was a method that Wright would have learnt whilst an apprentice.

Wright, like Baine, also supplied furniture for Strathmore and supplying tables for chambers in the first and second stories. In the ground storey, he provided an oak door—probably an external door, built-in timber benches and a table fixed with a *standard*¹²⁷ to the pavement floor. Strathmore gave detailed instructions for the alteration of two wainscot *presses* or cupboards, which were to be modified so they could be stacked one upon the other. The drawer from one of these cupboards was to be re-used in a new table, ‘... to serve for a shotle in a table the head and frame whereof must be made.’¹²⁸ But like Baine, Wright was not asked to provide Strathmore with any chairs, suggesting that the latter had already required sufficient numbers for Glamis from his furniture at Castle Lyon, or chose to purchase new chairs from either Edinburgh or London.

Two doors, (probably for the kitchen) one oak the other fir, were required for the ground floor. A further ‘...oack door ... for the entrie to Mounthooly from the foar court...’ was also required. Strathmore’s use of the term *Monthoolie* is curious, but if interpreted as a measure of the respect he had for his ancestors’ lineage and status could be an indirect allusion to the *Holy of Holies*.¹²⁹ His principal motivation in everything he did was to return his estates to their

¹²⁶ NRA 855/148/1/26

¹²⁷ Pride, *Glossary of Scottish Building*: standard n. (a) door post, (b) stud, quartering or upright post in timber framed [standard partition] p.73.

¹²⁸ NRA855/148/1/26

¹²⁹ The Temple Mount in Jerusalem or the Holy of Holies is a term in the Hebrew Bible which referred to the inner sanctuary of the Tabernacle and later the Temple in Jerusalem. It was used when referring to something highly venerated. *Ibid*, Slade, *Glamis*, p.37-39, Slade believed *Mounthooly* referred to a dispute between Strathmore and Nisbet over extras, in his words “a monstrous farrago of presumptuous nonsense”. This has

proper standing ‘for the honour and credit and preservation of my family’.¹³⁰ If Strathmore’s use of *Monthoolie* was used as a mark of respect to his forbears it could refer to the great stair tower built by his father. This was entered from the fore court, a part of the building which also incorporated the *Great Hall* – ‘the rowme that I ever loved’¹³¹ and the former *Chamber of Dais*. Strathmore’s building objectives at Glamis also confirm this. He intended ‘...to order my building so as the frontispiece might have a resemblance on both syds...’¹³² the great stair tower is central to this intention, and forms the pivotal element in his design for Glamis (Figure 74).

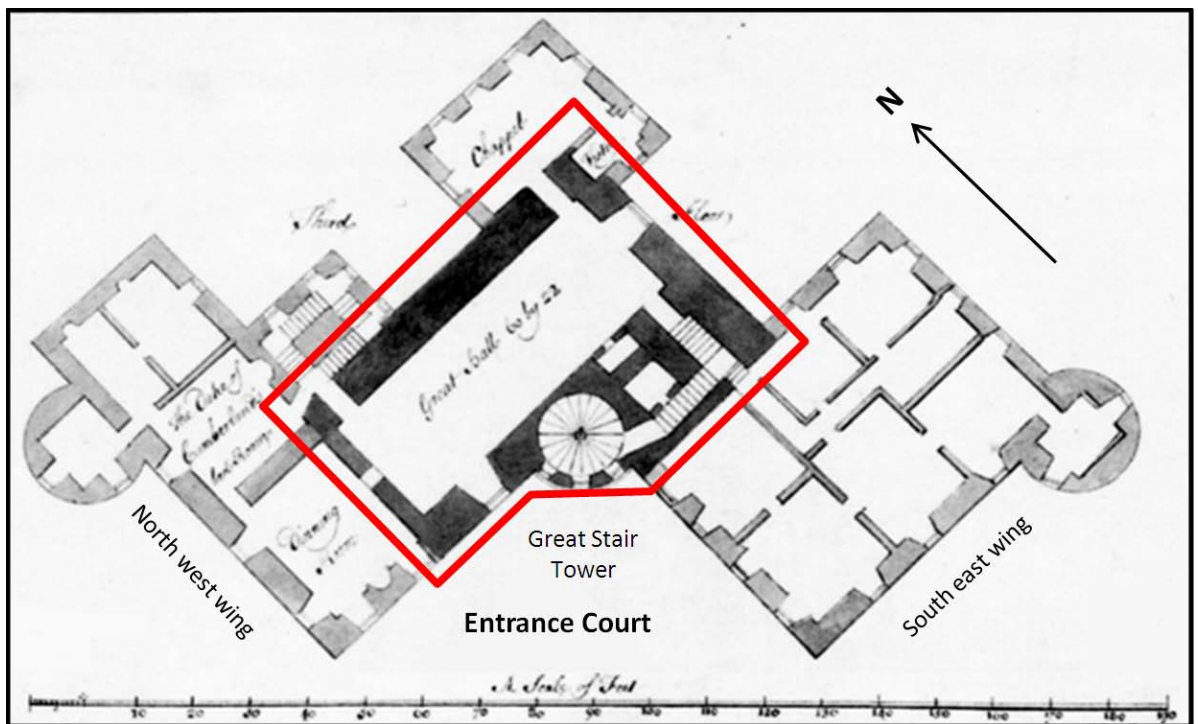


Figure 74: Plan showing Glamis and Strathmore's presumed *Mounthooly*, outlined in red, adapted from Elphinstone 1746.

The main house, outer courts and gatehouses were nearing completion in 1682, and in May Strathmore made a further agreement with Wright for wright and plaster work ‘that is design’d by the said Earle to be done in and upon the west quarter of the house of Glammiss...’

been refuted by Charles McKean who argued it referred to “the heart of the conceit”, and concluded this was Strathmore’s charter room and chapel at the north-east of Glamis, but this part of the building cannot be entered from the fore court.

¹³⁰ Strathmore, *Book of Record*, p.88. See Wemyss, ‘A Study of Aspiration and Ambition’, 2009, pp.50-51 for discussion of the importance of kinship to Strathmore.

¹³¹ Apted, ‘Building and other Works at Glamis,’ 1671-1695” p.95; NRA885/37/56/2.

¹³² Strathmore, *Book of Record*, p.41.

implying that the west wing was ready for finishing.¹³³ Wright was also to complete works already started in the Scarlet Chamber (east wing) and received 1000 merks to pay his men for this. Wright was clearly not a main contractor like Baine, but was employed principally at this stage of the building works at Glamis for finishing *i.e.* plastering and interior timber work.

By 1682, not only was Glamis nearing completion, but Strathmore had succeeded in re-organising his estates to provide himself with a respectable income. In the same year, he was appointed a Treasury Commissioner, which provided him with an annual sum of £6,000,¹³⁴ in addition to his by then annual net income of £15,000.¹³⁵ These changes in his circumstances gave Strathmore much more financial security, and the perfect opportunity for him to express his family's rehabilitated status amongst the Scottish nobility. He conveyed this during the 1680s at Glamis by engaging some of the same prestigious foreign craftsmen first brought to Scotland by the duke of Lauderdale for work at Holyrood Palace. In his contract with Andrew Wright in 1682 Strathmore stated that,

the wright shall be eased of much labour, for I here reserve the holl chimney peeces and dore peeces to be done by the Dutch carver..¹³⁶

This was a reference to Jan Van Santvoort who had worked for Sir William Bruce at Kinross House and had produced elaborately carved fireplaces and door pieces for Holyrood Palace in 1678 (Figure 75).¹³⁷ For his work at Glamis he received a payment for £394 in 1684.¹³⁸ In 1683 Strathmore commissioned the Dutch artist Jacob de Wet to paint a portrait of himself and his sons, with the newly finished building of Glamis in the background (Figure 76).¹³⁹

¹³³ NRA855/148/1/24

¹³⁴ Also in 1682 the Duke of Lauderdale was demoted from his office as Lord President of the Council of Scotland and died shortly afterwards.

¹³⁵ Wemyss, 'A Study of Aspiration and Ambition', 2009, Part Two p.37.

¹³⁶ NRA855/148/1/8

¹³⁷ Dunbar, 'Lowlanders in the Highlands: Dutch craftsmen in Restoration Scotland', pp372-376.

¹³⁸ NRA 855/ 256/1

¹³⁹ In 1680 following the completion of building works at Castle Lyon he commissioned de Wet to paint the door and chimney pieces there – *Book of Record* p.92. In 1688 he entered into a further agreement with de Wet for 31 painted panels and a new altar piece for the new chapel at Glamis. De Wet then went on to complete paintings on canvas for nine chimney pieces, 25 door pieces, plus ceiling panels for the dining room and principal bed chamber. See Apted, "Building and other Works at Glamis, 1671-1695" p.101. At Holyrood de Wet was responsible for a series of overmantel paintings and painted ceilings in the King's Chambers (Figure 65), and Charles II later commissioned him to paint a series of 110 portraits of the Scottish monarchs for the *Great Gallery*. His other commissions included work for the earls of Panmure, Kincardine, Kellie and also for



Figure 75: The Dutch carver Jan van Santvoort and artist Jacob de Wet both worked at Holyrood Palace where Santvoort's elaborate carving work enclosed a series of overmantel paintings executed by de Wet in the King's Chambers. Shown here from top left (clockwise): Charles II's Privy Chamber, carved detail from the overmantel in the King's Closet, door-pieces in *enfilade* from the Privy Chamber to the Great Gallery and Charles II's Bed Chamber. Photographs: © The Royal Collection.

Bruce at Balcaskie, where he painted several ceiling panels on canvas. See Dunbar, 'Lowlanders in the Highlands', p.373. In the principal bed chamber at Balcaskie de Wet had painted *Daedalus and Icarus* for Bruce, and in 1688 he painted the same motif for Strathmore in the principal bed chamber at Glamis. See Howard, "Balcaskie House, Fife", p71, also the principal bed chamber but known today as the dining room.

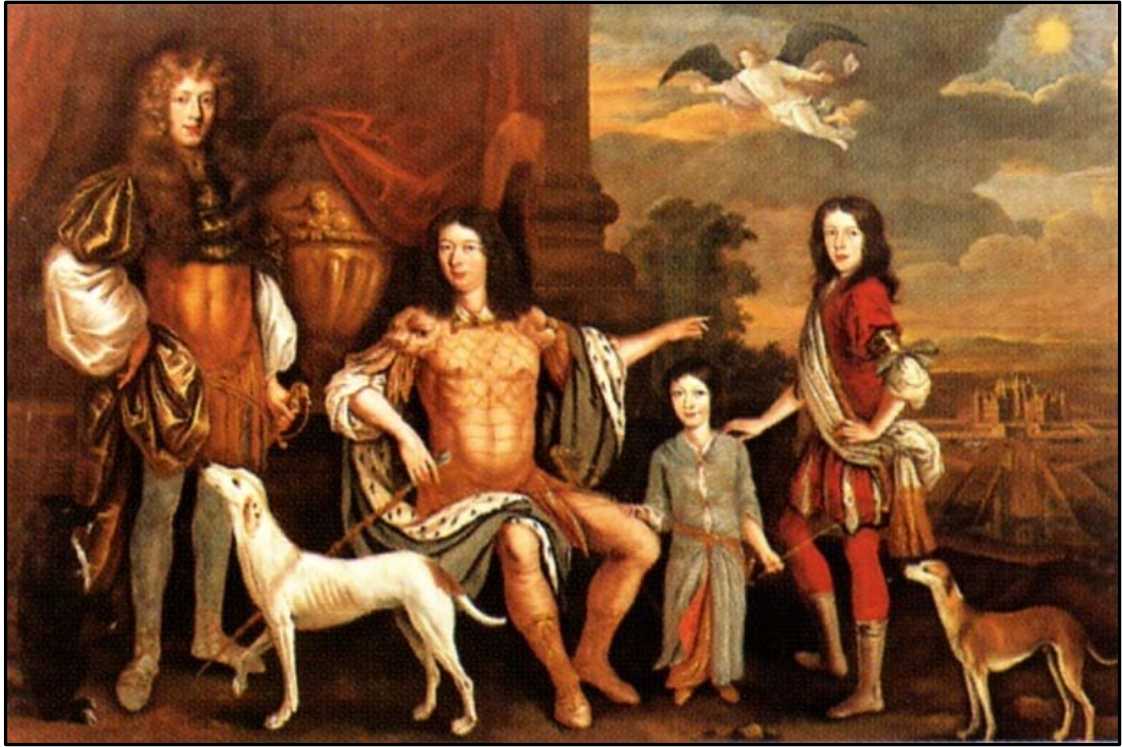


Figure 76: The Earl of Strathmore with his sons painted by Jacob de Wet 1683. The earl points to Glamis, the family's rehabilitated ancient paternal seat. Photograph: © Earl of Strathmore

Even though Strathmore commissioned prominent craftsmen for the elaborate decoration of Glamis, he continued to employ Wright at both his properties. Moreover, Strathmore arranged for Wright to take on the land and houses of the Byreflatt at Longforgan - valued at 2500 merks (£1,666 13 04) - for an annual rent of 40 shillings.¹⁴⁰ Wright remained there from 1682 until 1689 when he gave up his rights at Byreflatt in exchange for the charter of Rochelhill, which was then known as Wrightsfield – a name change instigated by Wright.¹⁴¹ The difference in price between Byreflatt and Wrightsfield was £733, which Wright was to pay off in kind through his continued work for Strathmore.¹⁴²

The final known account of work undertaken by Wright for Strathmore covered the years from 1691 to 1692 summing up the nature of wright and plaster work that he had undertaken at Glamis in that period.¹⁴³ The wright work amounting to £206 14 08 focused on secondary estate buildings - roofing couples for stables and byres, and furnishing secondary

¹⁴⁰ In March 1683 there is an *Instrument of Sasine* by Strathmore, in favour of Andrew Wright, carpenter in Longforgan, for the lands of Byreflatt. NRA855/148/1/24; 148/1/88; 40/2 /21

¹⁴¹ Strathmore, *Book of Record*, p.101-102

¹⁴² *Ibid.*, p.97.

¹⁴³ NRA855/148/1/59

buildings: the goose and partridge houses; two byres; the captain's stable and a stable for the cart horses; the north and south kennels. In total, 118 couples were shaped by Wright for the roof structures of these buildings, as well as sawing of laths, and making windows, doors and partitions, mangers, trevisses,¹⁴⁴ shelving, stairs, and benches for the dogs to lie on. Instead of commissioning pre-shaped and framed timbers, Strathmore seems largely to have employed his own estate wright for the shaping or sawing of timber from Norway.

The plaster work was priced by 'measure' in linear ells. Cornice work was the most expensive, and plastering over stone work the cheapest. Lath work in the gallery, north and north-west studies cost five shillings per ell, whereas stone work was priced at two shillings per ell. In the bed chamber, the cornicing cost ten shillings per ell; lath work (ceiling and sides) five shillings per ell. The total number of ells came to 525½ (approximately 500 metres) at a total cost of £104 16 09. However, the agreement between Strathmore and Wright regarding the property at Wrightsfield meant that Wright did not receive any cash payments for this work, which for Strathmore was probably a more convenient and practical method of accomplishing his building aspirations. This arrangement also gave him access to the skills of a highly trained and skilled wright as required. The principal advantage for Wright was the guarantee of regular work on Strathmore's estates. Although he never attained the necessary wealth and independence to operate as a main contractor like his former master Baine had, he changed his social status from a craftsman to that of a minor landowner becoming known as Wright of Wrightsfield.

¹⁴⁴ Trevis – (a) partition between two stalls in byre. See Pride, *Glossary of Scottish Building*, p.78.

Timber Types and Sources

The accounts that survive from Strathmore's building modifications, repairs and additions at Glamis from 1669 to 1695 contain much less detail on the types of timber cuts purchased and used than at Panmure. The majority of the information relates to the 1670s when Baine was the main contractor and supplier of building material. In general, the timber cuts included deals, wainscot, short wainscot and great long wainscot; greater and lesser joists; and knapholt. The only dimensions recorded were 200 twelve ells and 100 nine ells purchased in 1669 and 1670 and supplied by Baine. The dimensions strongly suggest that these would have been timber beams imported from Norway, used in the initial building work for flooring joists and roofing in the east wing.¹⁴⁵

Deals or pine planks constituted the most significant timber type by volume supplied by Baine for Glamis, again sourced from Norway. Depending on quality, such planking would have been used for flooring, sarking, lathwork and scaffolding. There were two "thicknesses" bought from Trondheim, with deals designated for flooring and sarking, and *rough* deals probably for scaffolding.¹⁴⁶ Since much of the work at Glamis involved plastered ceilings, huge quantities of laths were needed, sawn on site both by Baine's men and also later by Wright, most likely from these imported deals.¹⁴⁷ Similarly joists and roofing couples were shaped on site and in 1682 when Wright was working on various outbuildings all the roofing couples were cut or trimmed to size at Glamis.¹⁴⁸

Wainscot of oak (although the term had by this time begun to be used to describe panelling of either oak or pine),¹⁴⁹ was used for doors, window casements, shutters, panelling, washing boards, and partitions. There were two different cuts of wainscot - short and great long wainscot. In general, wainscot of oak would have been used for the higher status areas of the

¹⁴⁵ NRA 855/148/1/60

¹⁴⁶ NRA 855/148/1/ 44 and 37 p.4

¹⁴⁷ NRA 855/148/1/ 37 p.3

¹⁴⁸ NRA 855/148/1/ 44

¹⁴⁹ The term 'wainscotting' may also have referred to the method of sawing timber that ensured an even distribution of heartwood and sapwood. See Neil Grieve *The Urban Conservation Glossary* (Internet Version) www.trp.dundee.ac.uk/research/glossary/glossary.html

house, and as used at Glamis, the term probably signifies a better quality of oak used for visible wood work such as panelling, with *fir* or pine being used in the servant's quarters, kitchens and other office areas. Baine also furnished large numbers of tables and beds made by his men from both pine and oak. The only mention of knapholt at Glamis is for four pieces that cost £1 10¹⁵⁰ each, included in the 1677 accounts for slates and Trondheim deals. At Panmure, knapholt had been bought for the balusters of the great stair. Since the stairs at Glamis were stone, it may have been used for something that required stout pieces of oak timber for decorative carving or turning, for example to embellish a chimney piece, for making table legs, beds or plaster knops. Figure 77 is a summary of the timber believed to have been supplied by Baine for Glamis, as with Panmure, several categories and sub-categories were identified. However, double trees, great trees and planks were not amongst the descriptive terms identified for timber supplied by Baine, indicating that these items were probably purchased directly from Norway by Strathmore. Compared to the timber bought for Panmure, the terms used to describe deals were more numerous, often indicating their purpose and place of origin, *i.e.* for flooring or sarking from *drunton* - Trondheim.¹⁵¹

Summary of timber (by type) purchased from Baine for Glamis 1669-1677		
TIMBER CUT	QUANTITY	COST
Deals - ordinary drunton, thick drunton, scaffolding, sarking, flooring, laths	3610	1279
Trees	60	30
Joists - lesser, great	150	470
Knapholt	4	6
Wainscot - short, long, great long	165	880
12 ells	200	132
9 ells	100	66
		2863

Figure 77: Summary of timber categories and sub-categories probably supplied by Baine for Glamis. The figures in bold indicate an estimated cost based on prices in pounds Scots from similar items.

Trees or baulks rarely appear in the Glamis accounts, but the term *joist* was used, and may have been a synonymous term indicating that some pre-shaped timbers were bought. Other references to *trees* occur in the 1680s, when Andrew Wright took over the wright work. In 1681

¹⁵⁰ NRA 855/148/1/ 44

¹⁵¹ Compiled from the Strathmore Muniments, NRA 855/148/1/34, 60, and 44

when 45 wooden beams (baks/baulks) were purchased for £108, the sellers (not Baine) complained that they had actually been offered more money for their timber by Sir George Kinnaird of Kinnaird,¹⁵² and suggested that Strathmore should make up their loss in income. Whether he did or not, however, remains unknown. In 1685 £30 was paid for 30 twelve ell trees for “putting up some partiere [partition] walls in the west quarter of the house at Glamis” and in 1689, 60 rails, 21 great trees and 200 deals were required for Strathmore’s summer houses beside the gate of the pond at Castle Lyon.¹⁵³

At Castle Lyon, Baine claimed as extras the *long trees* that he had been obliged to supply after Strathmore increased the size of a room by cutting back the walls by four or five feet, and which Baine was about to joist. However, Strathmore had neglected to inform Baine of the change in dimension, so the trees Baine provided were far too short. He then had to send ‘...to Leith for Long trees...’ from his own stock of timber and quite justifiably pursued his client for payment of this additional service.¹⁵⁴ This also illustrates that not only could Baine supply long span timbers when required, but is further evidence that his timber business incorporated “vertical forward integration” into its organisation; his timber stocks were purchased specifically for use in his work as a building contractor. This incident, however, also highlights weaknesses in Strathmore’s architectural skills in visualising interior spaces, as well as illustrating difficulties when communicating accurate specifications to contractors. Strathmore berated Nisbet for building the chapel at Glamis ‘...6 foot wyder...than the stair case...’¹⁵⁵, where as his original specification stipulated that the the chapel was to be ‘founded wt ane equall breedth wt the back staire case...’¹⁵⁶ Nisbet probably realised that if he followed these instructions the Chapel would have been far too narrow. Perhaps such misunderstandings between client and contractors could have been avoided if Strathmore had employed an experienced architect¹⁵⁷ and by his own admission believed that it was necessary to have “...a

¹⁵² This probably refers to the 1st Lord Kinnaird c.1622–1689, made Lord Kinnaird of Inchture 1682.

¹⁵³ Strathmore, *Book of Record*, pp. 81 and 102.

¹⁵⁴ NRA 855/148/1/ 38 p.3

¹⁵⁵ Apted, ‘Building and other Works at Glamis,’ 1671-1695” p.99; NRA 855/37/56/2/MRA 3 and 6.

¹⁵⁶ Ibid., p.96; NRA NRA 855/37/56/2/MRA 1.

¹⁵⁷ NRA 855/30/1/13

headsman over the rest....”¹⁵⁸ Perhaps this was why his contracts with Baine, Nisbet and Wright included a clause to prevent Strathmore being liable for extras by ensuring that any omissions to the building requirements did not attract any additional costs. During the 1670s, the only person who could have assumed the role of ‘headsman’ at Glamis was Baine as main contractor.

In September 1673, a letter from William Coupar of Old Montrose¹⁵⁹ concerning an order from the earl for trees, stated that there were none to be had in Old Montrose at that time, but orders had been given to a ship for timber.¹⁶⁰ This is the only reference to Old Montrose as a source of timber for Glamis, as most other references named Dundee merchants, or recorded voyages undertaken by Strathmore’s ship the *Lyon*,¹⁶¹ in which he had an eighth share. A number of its voyages were recorded in the *Glamis Book of Record* and in the Strathmore Muniments. Although Baine supplied timber to Strathmore in the 1670s, albeit perhaps to a lesser extent than to Panmure, Strathmore imported his own timber from Norway on several occasions, and this may have been a more practical solution when cash was scarce, particularly since Strathmore’s estates could provide the necessary grain to export to Norway in a direct exchange for it.¹⁶²

The evidence shows that Strathmore’s ship sailed to Norway from Dundee for timber on a regular basis, providing timber for the building works at Glamis when required. Several accounts relate to the voyages of the *Lyon*, with one of the earliest accounts covering the period from 1672 to 1675¹⁶³ and coinciding with the purchase of thick timber deals from Trondheim.¹⁶⁴ Further shipping accounts concern the *Lyon*’s voyages to Norway and Holland 1679-1686, with accounts and receipts for timber in 1681-1682¹⁶⁵ and 1681-85.¹⁶⁶ In 1679 there is an account for

¹⁵⁸ Strathmore, *Book of Record*, p.93.

¹⁵⁹ Old Montrose was a shipping pier, close to the House of Dun.

¹⁶⁰ NRA 855/198/6/22

¹⁶¹ 16 October 1680 horning and poynding at the instance of John Lyon factor to the Earl of Strathmore against James Tailziour skipper in Borrowstouness, concerns failure by Tailzour to complete a contract to ship 50 bolls of bear from Dundee and return with lime on the ship *The Hope of Borrowstouness* : NRA 855/31/4/50

¹⁶² The nobility were also able to claim certain privileges that required no payment of import duties on some goods. This privilege was similar to one which relieved import duties on materials required for fishing and shipbuilding and mariners paid nothing on goods imported for their own use and at their own risk. See T.C.Smut, *Scottish Trade on the Eve of the Union 1660-1707*(Oliver & Boyd Ltd, 1963) p.38.

¹⁶³ NRA 855/108/4

¹⁶⁴ NRA 855/148/1/44

¹⁶⁵ NRA 855/62/6

victual sold and timber purchased at Dram[men] in Norway.¹⁶⁷ An account of John Lyon (factor) pertaining to Strathmore's rents in the parishes of Glamis, Airlie and Kirriemuir records victual sold of the crops from 1681 and 1682 to merchants and sent abroad, 'on the good ship called the *Lyon of Dundee*.'¹⁶⁸ Who were the skippers and merchants from Dundee with whom Strathmore carried out his trading transactions?

The Mariners of Angus names two skippers, Thomas Bower and John Fraser, in connection with the *Lyon*.¹⁶⁹ In 1669, before becoming skipper of the *Lyon*, Bower was skipper of the *Gift of God* sailing to Norway for timber and in 1680 he became the box-master of the Dundee Mariners Fraternity. As skipper of the *Lyon of Dundee* he sailed to Königsberg in 1683. He was probably related to Bailie Bower who was instructed by Strathmore in a memo dated 10 December 1681 to purchase "five painted brods wt Millers" (painted boards with frames) from Holland, which he required to hang above some doors at Glamis, plus some 'caiks of lead for platforms.'¹⁷⁰ The Bower family also appear in Strathmore's *Book of Record* on 18 April 1684, when he sold 100 bolls of meal to a James Bower, who also had a share of the *Lyon* with some others in Dundee. The earl referred to their imminent joint "venture to Norway" with the *Lyon*, no doubt for the acquisition of timber.¹⁷¹ John Fraser, who sailed to Norway as master of the *Lyon* five times between 1684 and 1689, was probably skipper when Strathmore and his partners embarked on their "venture" to Norway.¹⁷² On 25 September 1684, Strathmore bought a consignment of 1,260 deals from Bailie Duncan in Dundee, which were to be carried to Glamis, together with "...two other parsells of dales which came home in the *Lyon*...."¹⁷³ This was a significant year at Glamis in relation to the use of timber in building works, for that is

¹⁶⁶ NRA 855/108/13

¹⁶⁷ NRA 855/ 190/2/13; further accounts of the Earl of Strathmore trading with Holland and Norway 1681-1687 and his share in the *Lyon* [a volume of 12 pages] are contained in NRA 855/ 1/20.

¹⁶⁸ NRA 855/ 51/3/1 - [11 folio leaves]

¹⁶⁹ David Dobson, *Mariners of Angus 1600-1700*, (St.Andrews, 1992)

¹⁷⁰ NRA 855/ 198/5/1

¹⁷¹ Strathmore, *Book of Record*, p.60

¹⁷² Dobson, *Mariners of Angus 1600-1700*,

¹⁷³ Strathmore, *Book of Record*, p.68.

when the Dutch woodcarver Jan Van Santvoort was working there and these voyages to Norway would have sourced some of the timber necessary for his work.¹⁷⁴

In addition to sourcing timber directly from Norway, Strathmore also obtained timber from Dundee merchants. One was James Burgh a successful timber merchant and burgess. On 16 April 1684 Burgh purchased 60 bolls¹⁷⁵ of meal in preparation for his next voyage to Norway, a transaction that allowed Strathmore to clear accounts of £200 with him. Earlier in 1673 the Earl of Panmure had also bought timber from Burgh.¹⁷⁶ Burgh's regular voyages to Norway for timber are recorded in the *Mariners of Angus* from 1664 to 1686; firstly as master of the *James* in 1664 and then with the *James and Margaret* from 1681 to 1686. Between April 1681 and September 1686, Burgh sailed to Norway 23 times, clearly demonstrating that his main trading interest was timber. In comparison, skipper Gillespie made only nine voyages to Norway over a twenty four year period. On average Burgh made three voyages annually, with five being the most in any one year. In 1684 he returned to Dundee on 1 May from what must have been a fast turnaround for timber in Norway, followed by two more trips to that country. He returned again by 23 June and the final cargo of that year landed at Dundee 9 August. The speed of these three journeys suggests that he sailed to the Stavanger or Bergen areas, and had good sailing weather as would be expected during the summer months when he made the majority of his trips. The earliest voyage back to Dundee was dated 17 February 1685, which suggests that the ship overwintered in Norway. The latest one returned in November 1685 when the crossing would have been more dangerous and unpredictable, perhaps indicating an urgency to supply timber for the town.¹⁷⁷ The frequency of Burgh's voyages certainly gives some indication of the general demand for building timber in Dundee and her environs. Other merchants from Dundee who supplied timber to Strathmore included James Yeaman from the

¹⁷⁴ NRA 855/ 256/1

¹⁷⁵ "boll" – basic unit of dry capacity, the amount depended on what was being measured *i.e.* wheat, peas, beans and meal, were considered separately from barley, oats and malt. According to the standard measure of Linlithgow adopted in 1661 one boll of meal was equal to approximately 145 litres, whereas one boll of oats or malt was equal to approximately 212 litres. See Scottish Archive Network (SCAN) , *Scottish Weights and Measures*, www.scan.org.uk/measures/capacity.asp

¹⁷⁶ NAS GD45/18/602

¹⁷⁷ Dobson, *Mariners of Angus 1600-1700*, (St.Andrews, 1992)

family of merchant venturers who provided deals from Trondheim in 1677¹⁷⁸ and James Brough (1678 and 1682); both these merchants and Bailie Duncan belonged to the established elite of Dundee's seafaring merchant families.¹⁷⁹

Strathmore also re-used some timbers at Glamis, specifically for window frames.¹⁸⁰ Otherwise old timbers were removed by Baine for use as he saw fit, which may have meant some were re-used, either as structural timbers or perhaps as scaffolding, or sold on as firewood to local baxters. In 1669, before Strathmore began his modifications, he removed a considerable quantity of "great and old timber" from around the old house at Glamis, which he then sold to James Burgh for approximately £1000.¹⁸¹ Burgh paid Strathmore partly in money and partly in processed timber, which supports the likelihood that the windmill on the shore at Dundee was still operating as a sawmill.¹⁸² In 1678 Strathmore also sold trees for 1,000 merks from Castle Lyon to Andrew Wright and his partner Alexander White, who probably then processed the timber for use in building works. This transaction suggests that at the time they were not working exclusively for Strathmore.¹⁸³

Strathmore had the prudence to plant trees for the future, and hoped that succeeding generations would continue with his good works to improve his estates and properties whilst benefiting from his foresight.¹⁸⁴ He not only planted trees for their potential income, but also to enhance the position of Glamis in the surrounding landscape,

...the planting any thing growne to a hight wou'd make the seat of the house verie glorious indeed as invironed with a wood of no less bounds, but this is a work of a great time and what I shall not be able to accomplish I hope may be done in the succeeding age...¹⁸⁵

¹⁷⁸ The Yeaman family were one of Dundee's elite families who described themselves as merchant venturers. Charles McKean (ed), Bob Harris and Christopher Whatley, *Dundee 1500-1800: Renaissance Burgh to Enlightenment Town* (Dundee, 2009).

¹⁷⁹ NRA 855/ 148/1/44; 198/6/41 and 56/2

¹⁸⁰ NRA 855/ 148/1/44

¹⁸¹ Strathmore, *Book of Record*, p.40.

¹⁸² Mark L. Anderson, *A History of Scottish Forestry*, Vol. I (1967) p.317.

¹⁸³ NRA 855/ 148/1/30; Wright and White were given five years to pay and in January 1680 he reminded Andrew Wright that his share of 200 merks was due for payment.

¹⁸⁴ Strathmore, *Book of Record*, p.32.

¹⁸⁵ *Ibid.*, p.45.

In 1723, a public sale or roup of timber from Longforgan and Castle Lyon was announced by his grandson, the 6th Earl of Strathmore indicating that the planting had indeed proved to be a worthwhile investment capable of providing income for the estate. The financial gains from the sale were not, however, recorded. Typically, such material was not of building quality, since deals, nine and twelve ell baulks still had to be purchased from Dundee in 1724 for repairing the manse at Longforgan.¹⁸⁶

Similar methods to those used at Panmure would have been used for transporting building materials and supplies to Glamis. Dundee was the nearest and most accessible major port in the vicinity, and in 1681 Andrew Wright was recorded choosing oak timbers there.¹⁸⁷ Dundee was the place where Strathmore's men usually went to collect timber and other materials. In October 1686 an agreement with timber merchant James Bower turned, sour when he refused to allow Strathmore's men and horses in Dundee to collect deals and carry them back to Glamis. Strathmore questioned Bower's accounting methods,

...perhaps it is my ignorance for I have not been accustomed with the lyk
acompt befor for amongst us who are plain men in the countrie the
confounding hundereds with dozens is not very usewall.¹⁸⁸

The only exception to landing timber at Dundee was recorded in January 1694 when some timber was shipped from London, but since no Dundee ships were available, the *trees* had to be sent to Leith or Borrowstouness (Bo'ness).¹⁸⁹

Strathmore sourced the majority of the timber required for his building works either importing it directly from Norway aboard his own vessel in exchange for grain, or from prominent Dundee merchants. Very little timber from the estate woods was suitable for use in building work. Baine also supplied some of the timber at Glamis and Castle Lyon. However, his ability to supply timber may have been restricted by his involvement with the Crown works at Holyrood where we know he had made available his entire stock for the building work there.

¹⁸⁶ NRA 855/ 91/1/13 and 91/9/6

¹⁸⁷ NRA 855/148/1/18

¹⁸⁸ NRA 855/ 198/4 and 7(1): Strathmore may be referring to the counting convention within the timber trade wherein one hundred deals or baulks actually meant 120 pieces of timber.

¹⁸⁹ NRA 855/ 198/6/32

The timber initially supplied by Baine was of specific dimensions, but the timber cargoes sourced by Strathmore were more general, with the timber being cut to size and shaped once on site.

Conclusion and analysis

Strathmore clearly had an overall scheme of improvements in mind for his house at Glamis, which he recorded in his *Book of Record* outlining his principal objective to create a balanced facade. Unlike his uncle and tutor the earl of Panmure, Strathmore chose to undertake the design of his improvements himself, preferring to act as his own architect. However, some of the most prominent and skilled craftsmen available at the time undertook work at Glamis, a number of whom had also worked at Panmure. The most significant craftsman to be employed by Strathmore was James Baine, who acted as main contractor for the building operations at Glamis for at least ten years between 1668 and 1678. During this period, the most significant building modifications and additions were made, albeit in a piecemeal fashion due to Strathmore's restricted finances. In addition, by engaging Baine as his main contractor, Strathmore would have benefitted from Baine's good reputation, wealth and consequent creditworthiness for the acquisition of materials, men and services required for his building works.

Strathmore, evidently already familiar with Baine's work at Panmure, required Baine to reproduce prestigious work that he had executed there and at Holyrood. Strathmore used Baine to contract out the majority of the work at Glamis and Castle Lyon to several different craftsmen, retaining control of the work himself by acting as architect responsible for the design and execution of his own ideas and plans, which were not always successful. The initial work involved demolishing many of the old buildings from the former inner and outer courts, their replacement by a back court and the reorientation of the entrance front to face the south-west. To make Glamis habitable for his family, Strathmore concentrated first on improving the domestic offices, then on reparations and modifications to the south-east wing and central tower.

In 1676, Strathmore considered that his building plans were sufficiently advanced to reduce the numbers of workmen there, and consequently increase their numbers at Castle Lyon. So the next phase of work at Glamis, started in 1678, concerned the new west wing, and the north rectangular block containing Strathmore's charter room and chapel. That this work was undertaken by Nisbet alone signalled Baine's departure from Glamis. There were a number of probable reasons for Baine's exit. Firstly, the more complicated work and modifications had been completed, thus his services might no longer have been required since the remaining work at Glamis concerned only finishing work. Secondly, his departure coincided with the dismissal of Sir William Bruce from his position at Holyrood, which had a direct financial impact on all the senior craftsmen engaged in the Crown works. For Baine, whose entire timber stockpile had been given over to the building works at Holyrood, this was catastrophic. He no longer had access to the credit that came from being indirectly associated with the Crown, which was vital for someone operating as a main contractor. Thirdly, Strathmore, who by this time had restored some order to his own finances, may no longer have required Baine's services to help fund his building aspirations.

When Strathmore replaced Baine, he employed Andrew Wright as his estate wright and plasterer. Wright was a local Angus man who had trained and worked with Baine for at least ten years. He did not have the necessary financial means to take on the role of main contractor; again suggesting that Strathmore no longer required the services of a main contractor, and that only finishing work remained to be done at Glamis. Wright, having trained under Baine, was a highly skilled craftsman and capable not only of carrying out the required finishing work to a high standard, but was equally competent to install the more complicated method of framing floor joists using broken joints - his former master's speciality. Strathmore referred to Wright as 'my wright and plaisterer...' ¹⁹⁰ and secured a long term indenture that guaranteed him reasonable rates and reliable access to high quality wright and plaster work, as and when it was required at his properties. In return, Wright was able to negotiate land and property from

¹⁹⁰ Strathmore, *Book of Record*, p.97.

Strathmore in lieu of payment for his work, raising his status to that of a minor landowner in the process.

In addition to employing his own estate wright, when his finances permitted, Strathmore also commissioned two of the most prominent Dutch craftsmen working in Scotland, Jan van Santvoort and Jacob de Wet, who had carried out work in the King's Chambers at Holyrood. At Glamis they executed similar works, including elaborately carved door pieces and overmantels, painted panels and ceilings. Their engagement at Glamis coincided with Strathmore's appointment to the Board of Treasury Commissioners in 1682. Charles Wemyss has suggested that Lauderdale and the Treasury Commissioners were able to use their official positions to their advantage when undertaking their own building projects.¹⁹¹ Strathmore's appointment would have helped him financially, but his appointment in 1682 after Lauderdale's death meant Strathmore was less likely to have benefited to the same degree as members of the Treasury Committee had done at the height of Lauderdale's influence during the 1670s. With his limited finances in 1668, he had employed Baine as his main contractor; this was a wise choice as Baine had the necessary reputation, capital and credit for supplying building materials and for paying sub-contractors. However by 1682 Strathmore had succeeded in rehabilitating not only his finances and properties, but perhaps more importantly his family's status amongst the Scottish nobility.

Although Baine supplied some timber for Strathmore from his timber yard in Leith, by and large it was sourced by Strathmore himself from Norway. It made practical and economic sense for Strathmore to buy his own timber, traded in exchange for grain produced on his estate directly with Norway using his ship the *Lyon*. For Strathmore, this was probably a cost-effective and efficient method of obtaining timber. Evidently Strathmore did not order any pre-fabricated and framed roof structures such as Patrick Smyth had done at Methven in 1681. Instead he ordered more general cargoes of joists, beams and baulks. One of the disadvantages of not using an architect could have been that Strathmore was unfamiliar with standard sizes of pre-

¹⁹¹ Wemyss, 'A Study of Aspiration and Ambition' p.74.

fabricated roof spans and timber products. It is also likely that the problems were a consequence of building around and making adjustments to a pre-existing building. The nature of the building works at Glamis and also Castle Lyon certainly suggest the latter was the case. Strathmore had after all employed the foremost master wright and timber merchant in Scotland, who had all the necessary skills and experience to ensure that any new roofs and flooring fitted into the existing, but newly modified buildings.

The only standard pre-shaped lengths of timber that can be identified were nine and twelve ells. The oak timber used was similar to that purchased for Panmure, either wainscot or *knapholt*. The wright workmanship undertaken by both Baine and Wright at Glamis included several items of furniture and more latterly elaborate carving work, which implies that the *knapholt* bought by Strathmore may have been similar to that bought for the balusters at Panmure *i.e.* stout and squared off pieces of oak timber. At Glamis, to a greater extent than Panmure, Baine was responsible for providing furniture, tools and implements as well as timber for building construction and scaffolding. However, neither Baine nor Wright were expected to supply or make finer pieces of furniture, implying that these were not part of their repertoire, or that Strathmore preferred to purchase these items personally from London or Edinburgh.

By overstretching his finances with Holyrood Baine's business stalled. Once his role as main contractor for Strathmore was no longer viable, Baine left his employment at both Glamis and Lyon. After finishing at Glamis, there is much less evidence of work undertaken by Baine; instead only numerous petitions presented for unpaid accounts and compensation. He returned to Panmure in 1685 to finish off the interior woodwork for the third earl, and this was then followed by the first of three contracts for work at Brechin starting in 1688 for James the fourth earl of Panmure. Did this signal a revival of Baine's livelihood? It was certainly the last major building project he was involved with, not just for the earls of Panmure, but also of his entire career. The next chapter will examine Baine's role at Brechin to investigate not only the acquisition and use of timber, but also establish whether Baine was able to revive his earlier role

as a main contractor. Finally, it will examine whether he extended his professional responsibilities at Brechin to include that of architect.

CHAPTER 11: BRECHIN CASTLE, ANGUS



Figure 78: Brechin Castle, an engraving by Slezer c.1678-80 showing the south range overlooking the River Esk, suggesting that the entrance was originally from the north of the building.
© National Libraries of Scotland.

In 1686, James the fourth earl of Panmure succeeded his brother George, whose death coincided with the completion of the final contract at Panmure with James Baine. It did not, however, signify an end to Baine's involvement with the earls of Panmure as two years later he entered into a contract to work with the new earl in his building aspirations for Brechin Castle.

Patrick Maule (the first earl) had purchased Brechin Castle in 1634 from the Earl of Mar (whose daughter became Maule's third wife in 1639), but he was not the first Maule to have associations with the castle. In 1303, during the wars between the Scots and the English, Sir Thomas Maule, lord of Brechin Castle, had defended it from English attacks until being killed and the castle surrendered. Despite this defeat the castle apparently gained a reputation in the following centuries as a place of great strength and had been considered impregnable, situated at the top of an abrupt precipice (Figure 78).¹

In 1644, ten years after Patrick Maule had bought Brechin, the property was plundered and extensively damaged - as was the town where 60 houses were burned by James Graham the

¹ Samuel Lewis, 'Brechin - Byth (New)', *A Topographical Dictionary of Scotland* (1846), pp. 151-163. URL: <http://www.british-history.ac.uk/>. Date accessed: 11 December 2008.

Marquis of Montrose and his associates during the Civil War.² A document dated 1645 detailed the compensation due to Maule following this attack,³ and the substantial sum of almost £30,000 (Scots) was agreed. Most of this was for items stolen from the house, including bedding, napery, clothes, tapestries, ornaments and “costlie deckings”. It was also evident that extensive damage was done to the fabric of the buildings, which included the theft and destruction of all the ironwork and glass - calculated as 1,195 feet in total, as well as removal of timber work. For this latter damage, Maule was to receive approximately £600 in compensation.⁴

This 1645 document provides the first evidence that any building work was necessary at Brechin. What remains uncertain is whether the compensation was used to carry out repairs and improvements there. It is likely that at least some essential repairs were undertaken to make the building weatherproof, for there is an account from David Masterton - glazier to the king - in 1649⁵ for glazing repairs done at both Brechin and Bowshen. However, the first earl’s top priority at that time was building his great house at Panmure. For the next forty years Brechin was used by the family as their summer lodgings, ideally placed for salmon fishing on the northern bank of the South Esk (and thus similar to Strathmore’s use of Castle Lyon).

It was not until 1688 that Patrick Maule’s grandson James, fourth earl of Panmure, determined to make improvements to his house at Brechin. In addition to becoming earl of Panmure in 1686, he had also become a member of the Scottish Privy Council. His membership was short lived, however, since he was “laid aside” when he refused to support James VII’s (II) *Declaration of Indulgence* in 1687, just two months after his marriage to Margaret, youngest

² R. Gourlay and A. Turner, *Historic Brechin: the archaeological implications of development*, (Glasgow, 1977).

³ Patrick Maule was elevated to the peerage on 2 August 1646 as the first earl of Panmure, Lord Maule of Brechin and Navar.

⁴ NAS GD45/1/75

⁵ NAS GD45/18/673

daughter of the Duke of Hamilton.⁶ He then returned to his estates with his wife, where he now had time to contemplate improvements to his properties.

Alexander Edward, (son of Robert Edward) Minister of Kemback, and later architect to the Jacobite nobility, is usually cited as being responsible for the complete redesign of Brechin Castle and its environs.⁷ The work undertaken for the fourth earl by Baine, however, has been read as straightforward repairs and minor changes that resulted in legal disputes over payment and sub-standard work, ultimately leading to Edward's employment. Whilst the disagreements between Baine and Panmure certainly resulted in Edward's engagement at Brechin, the extent and importance of Baine's work may have been overshadowed by Edward's subsequent re-working of the building and gardens (Figure 79).



Figure 79: Brechin today – the west front attributed to Alexander Edward. Photograph: author 2008.

⁶ Stuart Handley, "Maule, James, fourth earl of Panmure (1658/9–1723)," in *Oxford Dictionary of National Biography*, ed. H. C. G. Matthew and Brian Harrison (Oxford: OUP, 2004); online ed., ed. Lawrence Goldman, October 2006, <http://www.oxforddnb.com/view/article/18367> (accessed December 10, 2008).

⁷ John Lowrey, "A Man of Excellent Parts" *Alexander Edward: Minister, Architect, Jacobite 1651-1708* (St. Andrews, 1987).

The building works undertaken at Brechin by Baine during the late 1680s were outlined briefly by John Dunbar in a *Country Life* article.⁸ He described the house prior to these works as a modest L-plan house of three storeys dating from the sixteenth century, the principal rooms in the south wing facing the river with a gallery in the upper floor of the north-west range. The surviving contracts, discharged accounts and letters, however, provide an opportunity for a new analysis of the development of Brechin between 1688 and 1694. Additional clues as to the older building's configuration can be glimpsed in the instructions for modifications within the contracts, adding to our understanding of its earlier layout.

The surviving plans and drawings by Edward provide a useful starting point for analysing the development of the building, and have been used to investigate the probable earlier layout of Brechin, particularly of the south range when Baine was working at the castle. The survey drawing (Figure 80), probably also drawn by Edward, shows a turnpike stair still *in situ* on the south-east corner of the west range, which implies that the west range did indeed extend from the west bastion to one in the north. Unfortunately the original drawing has been torn, and the area that would have shown the location of the north bastion has been lost, but an additional drawing on the reverse of the same paper shows the complete outline of Brechin, and includes two bastions; one in the north and one in the west (Figure 81).⁹ Although there is no date, it is likely to pre-date Edward's 1704 drawing of his specification for a lantron stair to replace the great turnpike stair. Importantly, the survey drawing indicates the original layout of the earlier building *i.e.* great turnpike stair, hall, chamber of dais, bed chamber, closet and household stair.

⁸ D. Walker, and J. Dunbar, 'Brechin Castle, Angus: I', *Country Life* August 12 (1971) pp.378-381.

⁹ I am indebted to Charles Wemyss for bringing these drawings to my notice.

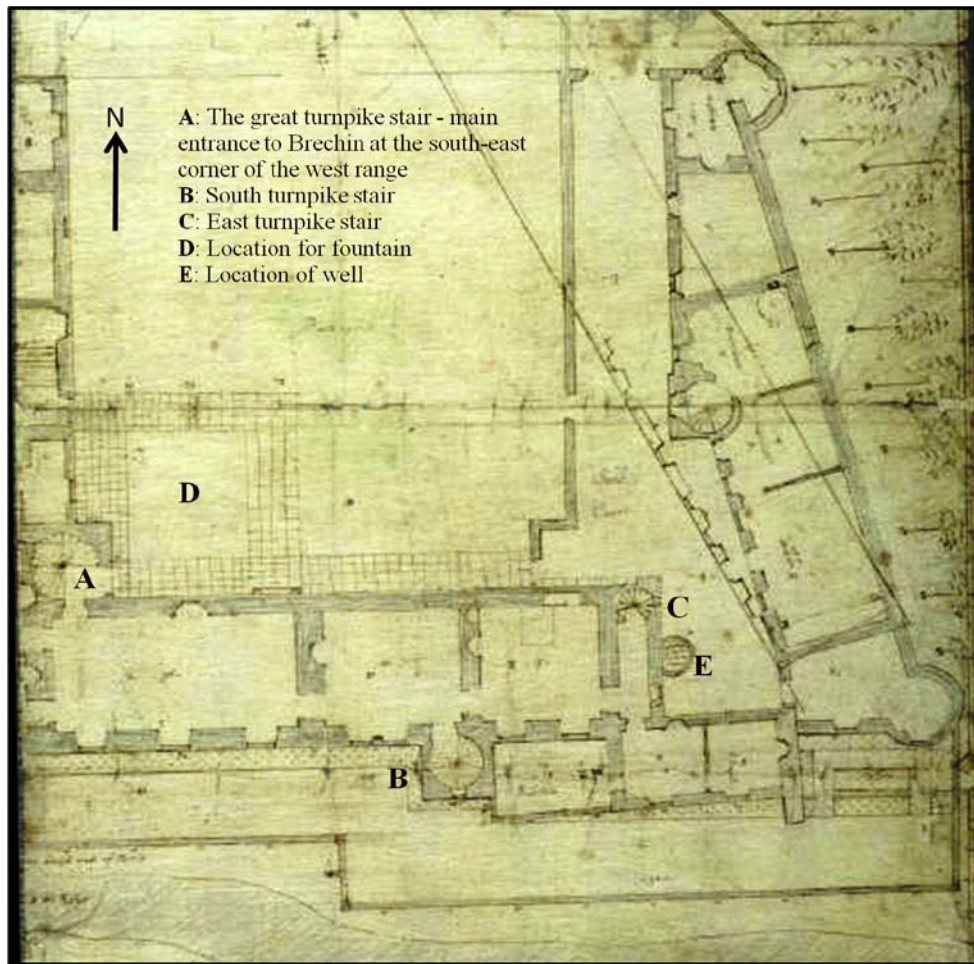
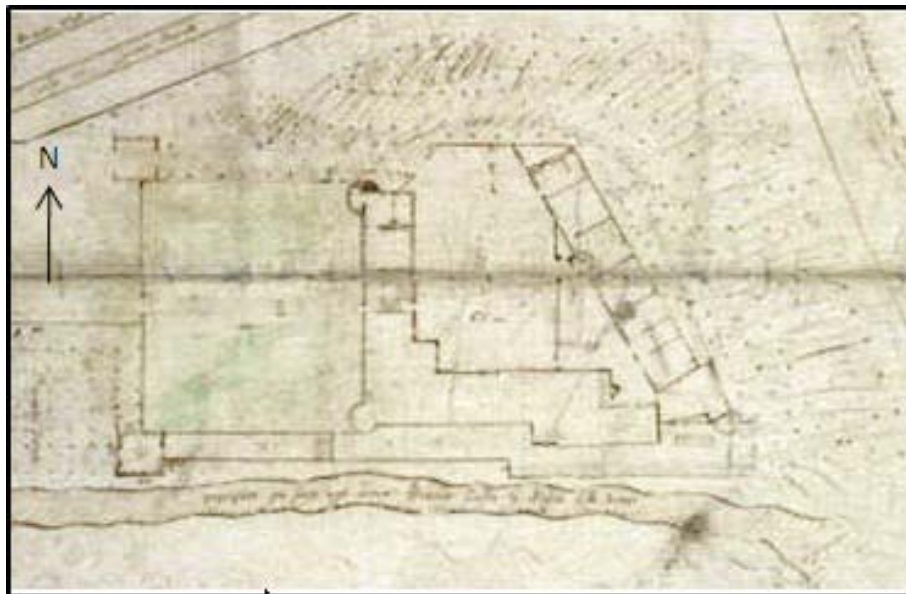


Figure 80: Survey of Brechin Castle pre-1704, showing the great turnpike stair (A) and a range of buildings extending northwards. RHP35168 ©National Archives of Scotland.

Figure 81: Reverse of previous drawing showing the outline of the buildings with two bastions on the west range and entrance from the west. RHP35168 or GD/25/40 ©National Archives of Scotland.



The main entrance was by way of the great turnpike stair; entered through the inner court on the north side (exactly as at Kinnaird), situated at the corner where the south and west ranges met. Bastions were mentioned in plural, which implies that both towers on the west front were built before 1688 (Figure 77A and B). The external masonry and thickness of the two bastions also indicates that they were built at the same time. The north bastion may have formed the north corner of the boundary wall of the outer court and the original entrance from the north. This would mean that Alexander Edward was not responsible for adding the north-west bastion as concluded by Dunbar.¹⁰ The west range would also have extended further north than suggested by Dunbar, and there were two galleries – both upper and lower – situated there.¹¹

Dunbar also concluded that a tower (house) probably dating from the mid-sixteenth century was located in the south range of the L-plan, although Slezer's drawing of Brechin shows a difference in wall heights between gables on the south range (Figure 82).



Figure 82: Detail from Slezer's engraving of Brechin that shows the south elevation before Baine started work at the castle (note the number and arrangement of windows indicating different floor levels, and also the height of gable beside the south-west bastion). © National Libraries of Scotland.

An inspection of the thickness of surviving walls from within the attic space indicates that what initially appears to have been an interior wall may actually be the original external

¹⁰ Walker and Dunbar, 'Brechin Castle', p.380.

¹¹ NAS GD45/18/1616/38

wall. The wall was wide enough to have a narrow turnpike stair cut into it that accommodates one person comfortably, and can be seen on Edward's drawing of the second storey at Brechin (Figure 83). This evidence suggests that the earlier building extended eastwards from this wall reducing the size of Dunbar's suggested footprint of the building (Figure 84).

The documentary sources illuminate Baine's working relationship with the fourth earl of Panmure. Whilst working at Panmure, he had been a major supplier of timber as well as having responsibility for the wright and plaster work. At Glamis he was employed as main contractor in addition to overseeing the wright and plaster work. At Brechin, the evidence indicates that the provision of timber was a less important aspect of his role, and that his responsibility lay instead with the organisation and execution of the building works as master of the works. This included overseeing works undertaken not only by wrights and plasterers, but also by the masons on site.

When the Earl of Panmure decided to undertake building work at Brechin, James Baine would have been the obvious choice for the work. During the previous two decades Baine had been involved with both the building and finishing of Panmure for the earl's brother and father. He had also worked at Glamis and Castle Lyon for the earl's cousin Strathmore, as well as for a number of other influential noble families.

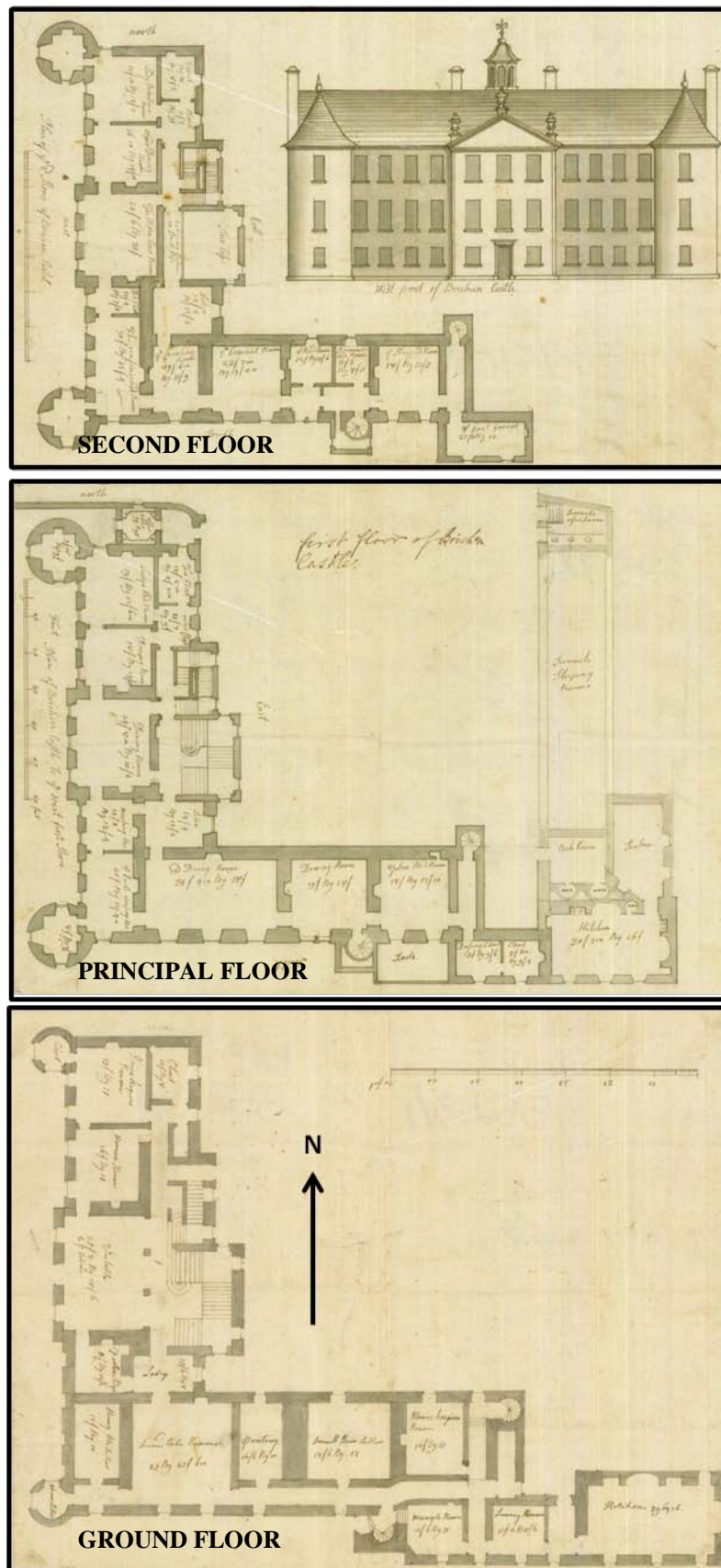


Figure 83: Alexander Edward's drawings of Brechin Castle c. 1704, showing his proposals and retaining some of the layout from James Baine's work especially the principal storey of the south range. RHP35213/1-3© National Archives of Scotland.

From the accounts, it is possible to put together Panmure's original brief for the building works at Brechin. Essentially this comprised a new state apartment in the south range, with a laigh hall and household apartment beneath, and a new regular facade facing a terrace and balcony above. This required the removal of vaults, raising the wall head beside the south-west gable, the addition of new sash windows regularly spaced and aligned, and the rebuilding of the eastern gable. In the west range, the vaults were to be left *in situ* (where the southern one still survives), and Panmure's own private apartment located above these was to be modified – walls thinned to increase the size of his rooms - whilst the upper and lower galleries overlooking the gardens were to be retained (Figure 84).

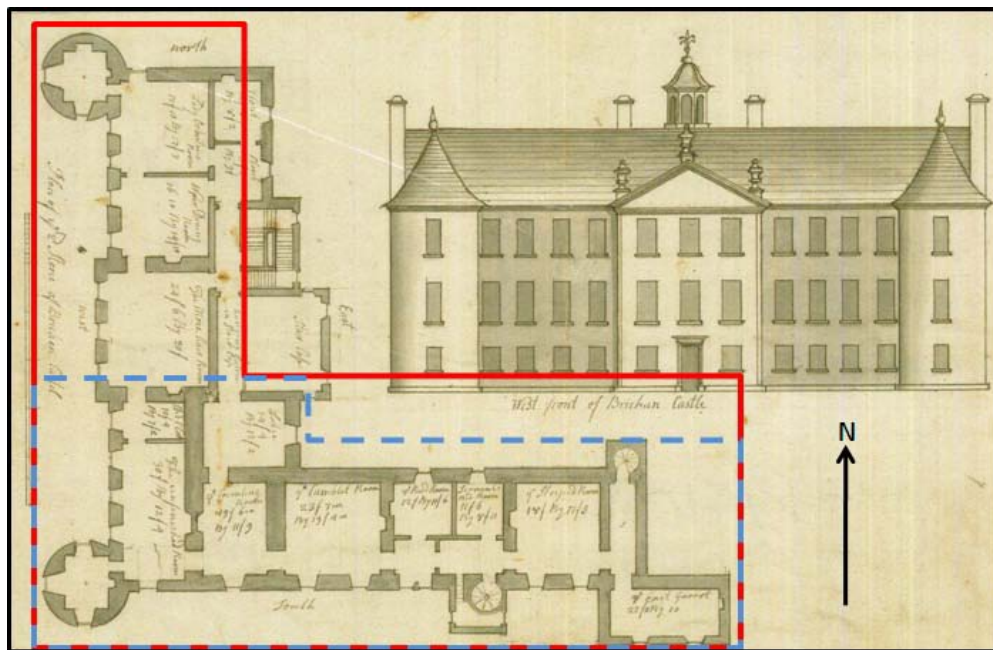


Figure 84: The second storey at Brechin from the original plans drawn by Alexander Edward c.1704. The blue dotted outline indicates the earliest part of the building at Brechin and the main area of the house that Baine was initially involved with. The solid red line indicates the extent of the rest of the building works at Brechin during Baine's employment there, which extended to the northern bastion of the west range.

© National Archives of Scotland RHP35213-3.

The initial Brechin contract, signed in Edinburgh and dated 23 February 1688, for wright, plaster and masonry work,¹² was quite straightforward, dealing with some repairs and improvements to be carried out on the principal floor of the south range. The wright and plaster work extended to the five principal chambers: the great dining room, the drawing room and the bed chamber (together with side rooms) on the principal floor, with a bed chamber and “long”

¹² NAS GD45/18/1616/1

study above. The introduction of the term *Great Dining Room* to Scotland has been dated to the 1660s, and demonstrates that the earls of Panmure embraced this more formal arrangement by adopting the terminology at Brechin, having already used it at Panmure.¹³ On the principal floor, Baine was to assess the rooms for faulty joists, replacing them if necessary, and to floor the side rooms with “sufficient dry fir dailles” to make the floors of this storey all on one level. This instruction corresponds with Slezer’s drawing showing two rooms on the principal floor with higher windows that suggests different floor levels. The nature of this work implies that there was rot evident in the joists, or that they had cracked and split, hence the emphasis on properly seasoned replacement timbers. It also indicates that rooms were on different levels, evidence of different building phases, and possibly that originally there may have been several separate buildings at Brechin. The room above the principal (her Ladyship’s) bed chamber was also to be joisted and floored so that this storey was on one level. The study adjoining this bed chamber was to have its roof and south-east gable taken down and rebuilt, suggesting that it was in a weakened state and required remedial work rather than modification.

A significant item was the installation of sash windows - providing seven sash windows with glass set in lead for the rooms of the principal storey, with eight door pieces and four chimney pieces, and washing boards for the principal rooms, side rooms and study. The doors leading off the dining room were to be placed on the long side in an *enfilade* arrangement similar to Bruce’s modifications at Balcaskie, where Baine had been involved during the 1670s (Figure 85).¹⁴ These changes would have made the character of these rooms, both internally and externally, correspond with the terminology being used to describe them. The five principal rooms mentioned were also to have “handsome” cornices, and any deficient joists were to be replaced (rather obviously) prior to the plastering work. This repeated issue of joists that required repairing points again to possible problems with rot and broken or weakened joists, or

¹³ Wemyss, ‘Aspiration and Ambition’ p.4.

¹⁴ Philip Fitzalan Howard, ‘Balcaskie House, Fife, and the early architecture of Sir William Bruce’, M.Litt. diss., University of St.Andrews, 1988;

indicates that this was the oldest part of the building which was prioritised for a structural assessment and new interior finishing for the principal public chambers.

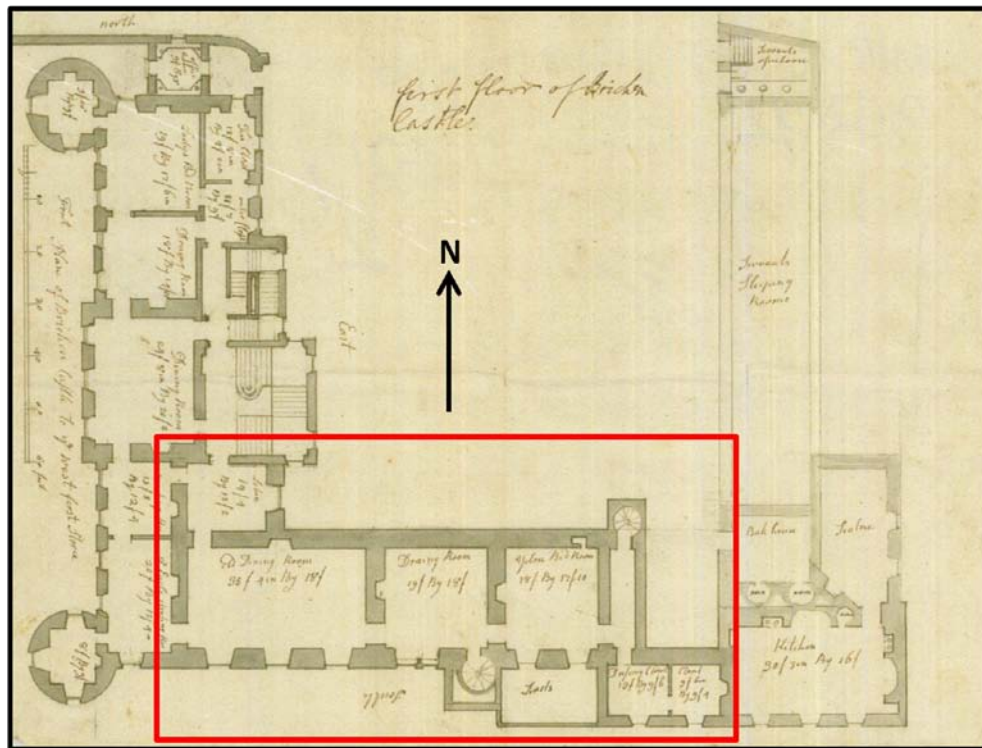


Figure 85: The principal rooms - *enfilade* - referred to in the 1688 contract with Baine are shown here as the *Old Dining Room*, *Drawing Room* and *Yellow Bedroom*, and correspond to the original (mid-sixteenth century) layout of hall, chamber of dais and bed chamber, indicating the probable boundaries of the earlier building outlined in red. Original plans attributed to Alexander Edward c.1704.
© National Archives of Scotland RHP35213-2.

Baine was also to oversee the mason's work, which included striking out the seven windows on the principal floor mentioned above, and windows in both closets and study. A new chimney was required for a bed chamber (although which one is unclear), and he was to dismantle and then re-build the south-east gable of the study from the bed chamber. The east turnpike stair was also to be taken down and re-built so that it entered the (principal) bed chamber and work was to be carried out on the bed chamber above. From these instructions it certainly sounds as if the east gable wall had serious problems of structural weakness.

The sum agreed for the work was £2,592 Scots (£216 sterling), divided up to include an allowance for one chalders of oatmeal to the value of £50 sterling, which Baine was to use for the purchase of necessary materials. A further £50 sterling was to be paid when the work was half completed, and the remaining £116 sterling once it was finished. Baine would have the benefit

of any old timbers for re-use or as scaffolding for the mason and plaster work. The Earl of Panmure was responsible for the transport of all the timber and nails that Baine was to supply, and the earl was responsible for providing stones, lime and sand for the work.

A general proviso was that for every day that either the masons or wrights stood idle for want of materials, Panmure was liable to pay each man 20 shillings.¹⁵ This was a huge penalty, since the masons were normally paid twelve and the wrights received ten shillings per day. During 1690 and 1691 twelve masons and seven wrights were employed at Brechin, which would have cost Panmure approximately £19 in total for each day the men were idle - although there is no evidence to suggest that this penalty was ever incurred.

There are no references to drawings or plans, but there must have been some since the description contained in the contract would not have been sufficient. The overall intention of the building work seems to have been the straightforward repair and smartening up of a somewhat neglected and old fashioned summer residence. The insertion of sash windows on the southern elevation and the creation of a horizontal suite of three rooms in enfilade would have certainly achieved a much improved degree of 'modernity'. These decisions may well have been influenced by the Duke of Lauderdale's improvements at Thirlestane and Lethington during the 1670s, or perhaps Panmure's in-laws' building works at Kinneil (also in the 1670s) and Hamilton Palace in the 1680s.¹⁶ However, unlike Panmure and Glamis, there was no specification by direct reference to other buildings contained in the contracts for any of the work carried out at Brechin. The only reference to other works was in 1693 when Baine tried to recoup some of the money owed to him for his work at Brechin. He referred to the quality and excellence of the broken jointed floors that he had installed, insisting that they at the very least equalled those he had been responsible for at Panmure and Holyrood.¹⁷

The work outlined in the first contract must have only been partly completed when a second contract was drawn up on 5 March 1690. Panmure had apparently decided to continue

¹⁵ NAS GD45/18/1616/1

¹⁶ McKean, *Scottish Chateau*, pp. 248-250. Marshall, *Duchess Anne*, pp.189-208.

¹⁷ NAS GD45/18/1616/15

with much more comprehensive improvements to Brechin Castle, and had discussed these with Baine. The new agreement acknowledged the content and responsibilities of the former contract, and laid out what additional articles of work were to be done. A much more detailed description of the work was provided, and specified additional dismantling and rebuilding of both side and gable walls of the entire south range.¹⁸ This would have resulted in a massive amount of building work, and could indicate an almost total re-modelling of the entire south side of the south range. Perhaps its purpose was to replace earlier work that had joined two previously separate buildings or towers.

The instructions in this contract, whilst detailed, were often misleading as they jump between various chambers and storeys; another sign that plans must have existed to support the written material. The following is the first attempt to clarify and summarise it. First was the building up of the south gable of her ladyship's bed chamber, which according to Edward's drawing (Figure 81), is likely to have been the Yellow Bedroom on the first floor. An amendment to the first contract included the replacement of one of the new window apertures with a doorway which would open out onto the balcony/leads. This work can be more easily understood by comparing Slezer's drawing with that of Grose's later illustration (Figure 86).

¹⁸ NAS GD45/18/1616/2

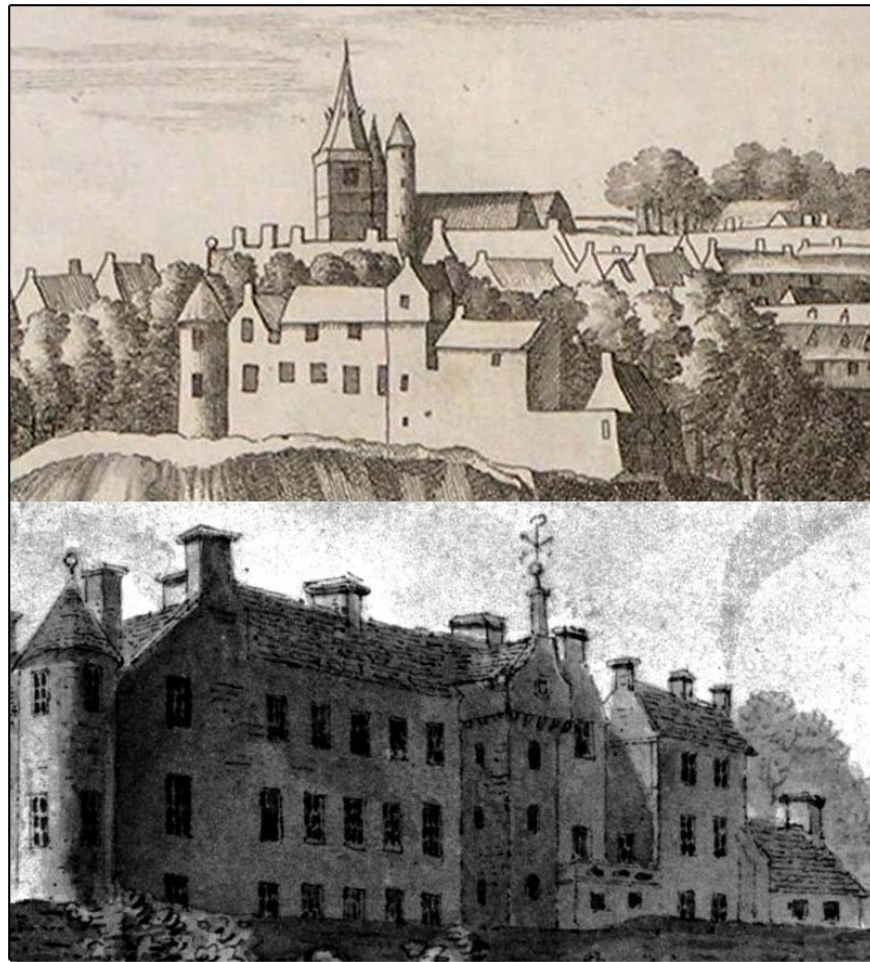


Figure 86: The detail from Slezer's drawing compared with the Grose drawing showing the re-modelling of the south range undertaken by Baine. Adapted from Slezer and Grose.

In total, twelve new chimneys (implying 12 chambers) were required. Five were to be made “concave” with marble mouldings and ornamentation, and one was to be relocated, each location being specified in the contract,

...putting in of a chymney in the latter meat room next to my lord's dressing room in the south syde of the said syde wall....

The height of the chimney stacks was also stipulated, and in the case of the chimneys between the principal bed chamber and the drawing room, the necks were to be raised three feet above the roof.¹⁹ The side walls of the dining room were to be raised so that its walls were of a uniform height with the adjacent drawing room, and the walls in the garret or attics were to be

¹⁹ NAS GD45/18/1616/2

“peeled” to make the rooms three feet wider. This meant that the roofs also had to be dismantled, rebuilt (with a larger span) and sarked with deals in readiness for slating.

Essentially, the Earl of Panmure re-defined the existing rooms to create two suites for accommodation. The first was located in the southern wing with a view over the South Esk; the dining room, drawing room and principal bed chamber with viewing platform or balcony. The second was in the north-west range with his Lordship’s dressing room on the west side of the dining room’s gable wall; the latter meat hall was then next to this room, followed by another bed chamber. Each suite was decorated with “handsome” cornices and plastered ceilings (probably in plain work as no relief details were mentioned as they had been at Glamis and Panmure), and the walls lined with fine panelling.

Externally the building works were concerned with creating a perception of uniformity; walls were raised to equal heights, as were chimneys; external walls were also “peeled” to straighten them,’ ...[peeling]the north syde wall from the east gabell roof [wards] to make the syde wall on a strait lyne...’²⁰. New sash windows fitted with “diamond cut” glass were to be placed along the south face of the southern range, which would have created a balanced and regular facade. They would not only have made the principal rooms lighter, but also given the occupants the opportunity of admiring dramatic views across the South Esk.

A more difficult feature to locate was the ‘pended porch of stone built from the ground upwards four stories high...’ Since it was listed immediately after a reference to the raising of a side wall on the east side of the bed chamber, it may refer to the same area of the building and if so, is probably represented on Edward’s drawings by the double/parallel passageways on the south-east gable beside the entrance from the back court. A further mention of the ‘the syde wall therof which is of stone and ane pearch pend over the weell [well] ...four story high with two windows...’ confirms this.²¹The well was also drawn on the survey of Brechin at the south east gable, located at E on Figure 70. One possibility is that this porch added structural strength to

²⁰ NAS GD45/18/1616/2

²¹ NAS GD45/18/1616/14

this gable, which corresponds to the problems already encountered in this area of the building in the first contract.²²

The costs for the work were agreed at £500 (sterling) that is £6,000 Scots, with the work to be completed by March 1691. On completion of the work, Baine was to receive 4 chalders of good oat meal and one barrel of salmon (valued at approximately £50 sterling) and to 'have the benefit of the old timber and all the iron grates now in the castle of Brechin', which Baine would have removed and re-used.²³ A penalty for failure to complete the work was agreed at £100 (sterling).

Baine's final contract for work at Brechin was dated 16 February 1691, and once again he was responsible for the mason, wright and plaster work.²⁴ The removal of two vaults below the dining room, previously used as *girnals* for storing meal, was the main concern of the third contract (Figure 87). This radical remodelling also entailed the removal of a wall between vaults in the south range. Two windows were to then be struck into the south wall directly beneath the most easterly and westerly windows of the dining room, with the windows' sills 3 feet from the ground. Once again this would have further enhanced the balanced external appearance of the southern range and let in natural daylight. A chimney was to be built on the north side so that it could be vented via the one from the dining room fireplace.

²² NAS GD45/18/1616/2

²³ The iron grates would have been obsolete since the windows were changing size and shape.

²⁴ NAS GD45/18/1616/3

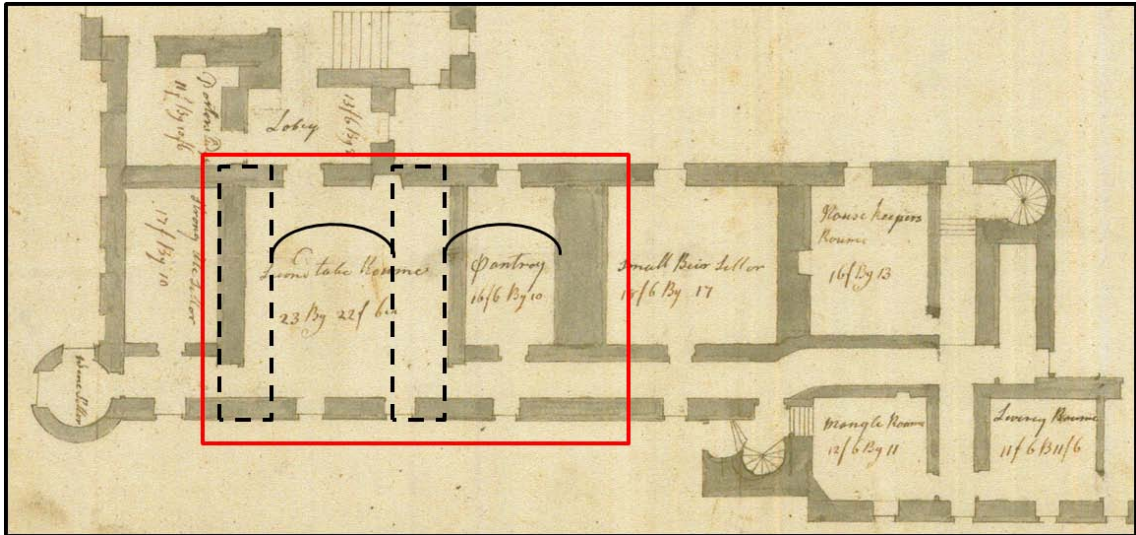


Figure 87: The ground floor at Brechin showing the removal of two vaults creating a new laigh hall or reception room the same dimensions and directly beneath the Great Dining Room. As can be seen here new windows were struck into the south wall and a fireplace built on the north side.
Adapted from RHP35213/1 © National Archives of Scotland.

This new room on the ground floor was to be the same length as the dining room above, it was to be plainly plastered with a “handsome” cornice and was to be used as a low hall or ground floor reception room.²⁵ The room was not named, but it may have been intended to take over the function of the earlier Latter Meat Hall described in the second contract, situated beside his Lordship’s dressing room in the west range on the principal floor.²⁶ The ground floor location beside the entrance was a much more logical position for this room since it would have assumed its place in the formal progression through the house to the principal chambers above. Access would have been through the main entrance at the south east corner of the west range, from where it was also linked by the Great Turnpike Stair to the Great Dining Room directly above.

In addition to the creation of this room, a new landing or “platt” was to be built at the dining room doorway, presumably on the room’s north side, where an existing stair would lead directly to the kitchen below,

...the making of a plott[platt] at the dyningroum doore and taking down the staire from that downwards so as to gaine above of a sufficient hight into the kitchen at that place wher the sevenine [serving?] window is now and

²⁵ McKean, *Scottish Chateau*, p.197.

²⁶ NAS GD45/18/1616/2

to make a hewn stone doore that goes from the [south]roume...to that great turnpike...²⁷

A similar solution was subsequently adopted by Edward when he re-worked the west range at Brechin. He retained the approximate location of the former great turnpike and replaced it with a grand ‘lantron stair’, but he included a household stair beside it that took over from the main stair at the principal floor (Figure 88 and 89).

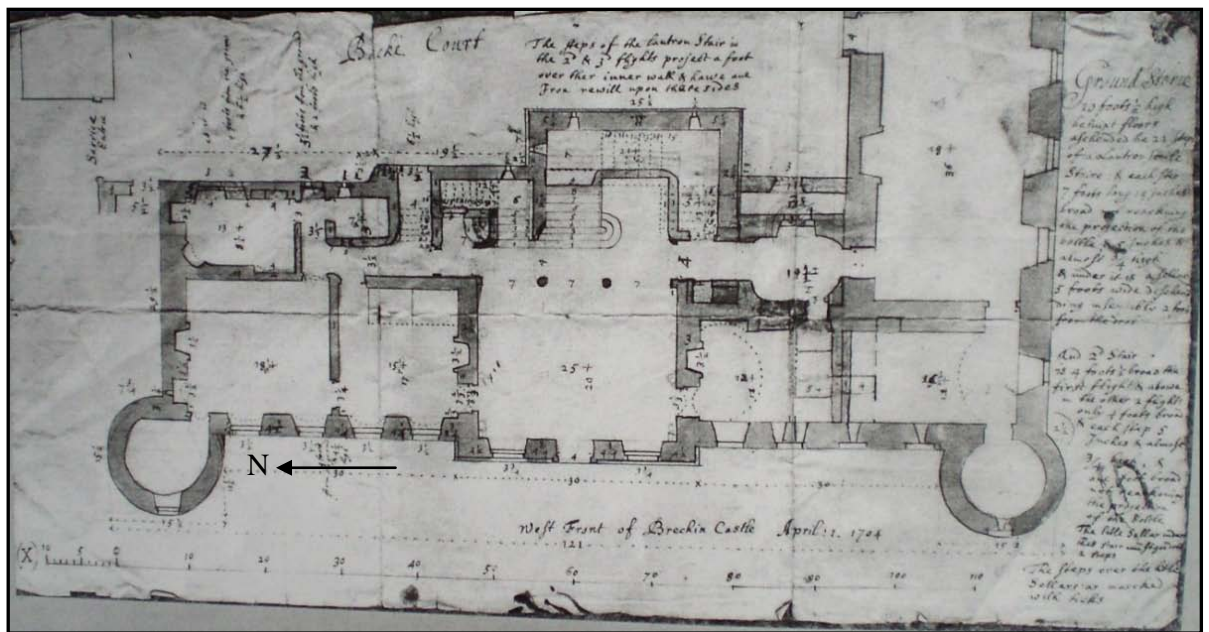


Figure 88: Drawing of the west front at Brechin Castle, with detailed specification for the ‘lantron stair’ and service stair by Alexander Edward, 1704. © NAS (RHP 35166)

²⁷ NAS GD45/18/1616/3

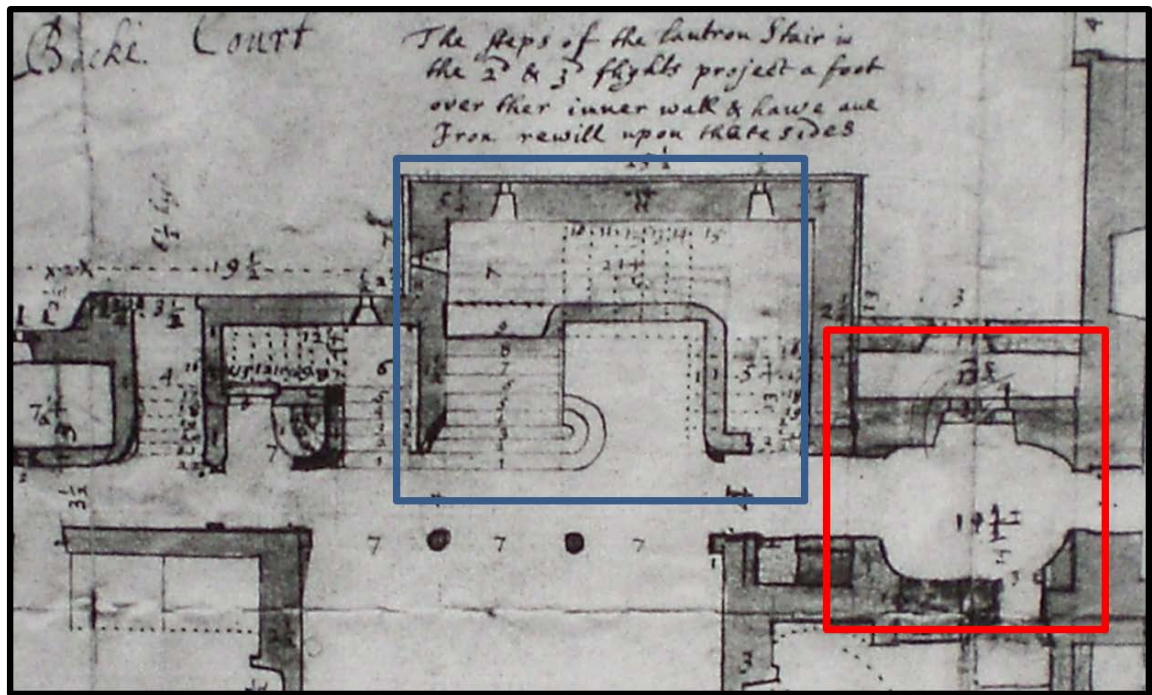


Figure 89: Detail from Edward's drawing showing his new 'lantron stair' outlined in blue, and the location of the earlier great turnpike stair outlined in red. © NAS (RHP 35166)

The costs for this third contract were agreed at a modest £400 (approximately £33 sterling); less than 5% of the previous two contracts added together. This was despite the requirement for additional scaffolding and timber for propping up the whole of the south range whilst the work was undertaken. The payments were liberally supplemented with eight bolls of oat meal plus half a barrel of salmon, half of which was to be paid on demand, and the remainder eight days after the work was finished. The earl of Panmure was to provide the timber joists as well as stone for the work; including the winning of the stones. He was responsible for the carriage of the stones, timber and everything else necessary for the work, as he had been in the previous contracts. The work was to be finished by 15 April 1691, with penalties if this was not successful. The final paragraph of this contract clearly stated that no additional work was to be undertaken by Baine without first obtaining the consent of the earl; nor was Baine to send accounts for any work that was not described in any of the three contracts. Despite this, Baine's work at Brechin ended in a legal dispute over work executed without previous consent.

The accounts presented to the Earl of Panmure from Baine, along with their personal letters and itemised lists of work done (both contracted and beyond the terms of the contracts)

provide some insight into the difficulties and organisational problems of seventeenth century building projects. First, it could be argued that at Brechin, unlike Panmure and Glamis, there was no coherent plan or vision in place when the building works initially started. This piecemeal approach to the work then led to misunderstandings and changes to instructions after work had commenced - hence the need for three contracts to verify for both parties what had been agreed on at different times over the four years. Subsequent contracts at Glamis and Panmure generally denoted different stages in the building process; at Brechin they seem to signify a shift in thinking, resulting in work not always being executed in a logical sequence. For Baine, as the main contractor and master of works, this resulted in a building process with spiralling costs. Consequently, accounts for additional work above and beyond the contracts were submitted to Panmure.²⁸ This was not an unusual feature of Baine's working life - as Panmure presumably knew when he forbade it. Despite risking dispute with Panmure, Baine claimed to be acting in his client's best interests at all times. As the official master of the work²⁹ his responsibilities included ensuring that works were carried out to a sufficient standard.³⁰

The first contract in 1688 outlined work to simply smarten up the principal rooms by inserting new windows and fireplaces, replacing rotten flooring joists as necessary and finally re-plastering, all to be completed by the end of September 1689.³¹ Two years later, in the second contract, a far more extensive plan of work was devised and included the taking down and building up again of walls to raise ceiling heights. The work of the first contract should have been completed six months before the second contract was signed, and but there is evidence to suggest that this work had not been completed on time. If it was possible for the structure of an entire house to be completed in the course of two years (such as at Panmure - even if the interior work was not finished), one would imagine that Baine should have honoured his contract. Unfortunately if most of the works of the first contract had been finished, it also implies that

²⁸ NAS GD45/18/1616/6b (wright work); 8, 12,14,16,17,18,28,38 (glass accounts)

²⁹ NAS GD45/18/1616/18

³⁰ Dunbar and Davies, (eds.), 'Some Late Seventeenth Century Building Contracts'p.273.

³¹ NAS GD45/18/1616/1

some of it would then have had to be undone and then re-done, which according to a letter from Baine in 1694 certainly seems to have been the case at Brechin,

...your Lop: has forgot that when you came from London you caused
heighten all the jeasts of the upper storie of the whole house tuo foots and
a half more...which occasioned the plaister work to be done over again...³²

At the same time, he must have been aware that Panmure was considering further modifications at Brechin since he instructed the masons to prepare additional building materials in preparation for future works before they had been agreed by both parties with the second contract.³³

The evidence shows that Baine also undertook a number of additional works on his own initiative - namely the addition of numerous dormer windows on the north, south and west attics of Brechin and also extra chimneys or fire rooms. He stated that

... this hous had but formerly nyne or ten fyre Roomes besyde the Kitchen
but now by this new reparatione it will be twyse as good and more then
over it was because as now it is intended to be there will be tuo and tuinty
ore three and tuinty fyre Roomes besyde the Kitchen.³⁴

Baine explained in a letter dated 3 April 1693 that the extra windows were done in the best interests of his client and necessary otherwise "...the house would have looked rather like a prison than a house of pleasure..."³⁵ His motivation for this extra work apparently stemmed from his loyalty to Panmure whom, according to his letters, he greatly admired. Baine seems to have felt responsible for the overall aesthetics at Brechin and was determined to create balanced facades, suitably ornamented for the Panmure family.

The extra rooms with fireplaces "gained" in the attic storey from the addition of dormer windows, plus the gabled chimneys that Baine had built in the south garrets resulted in a well documented disagreement with Panmure. Baine maintained that he had only built them because Panmure did not directly 'discharge' him from doing so, although he admitted that the earl

³² NAS GD45/18/1616/20

³³ NAS GD45/18/1616/23

³⁴ NAS GD45/18/1616/14

³⁵ NAS GD45/18/1616/15

‘thought them superfluous.’ In his defence, Baine went on to say that he recalled Panmure’s mother complaining of the lack of chimneys in the garrets at Panmure House. He decided, therefore, to include the extra chimneys; firstly for the convenience they provided as guest chambers and secondly because the gable/stormeing above the bed chamber was already ornamented with a chimney to the south. As he was already contracted to take up two gables above the dining room on the south range, he decided to take up two more chimneys at the same time. He claimed that this was to further “ornament the house”.³⁶ Similarly, on the west facade of Brechin, Baine insisted that both the earl and his brother Kelly (Harry Maule of Kelly Castle, Angus) had agreed to two new chimney heads and to a further dormer window facing into the east court, which was necessary to make that facade of the house more balanced and regular.³⁷ He had also added another dormer window,

...in the south end of the gallerie without any chimney which makes it conforme to the stormen in the head of the turnpicke and makes the southside of the house uniforme and regular...

Baine did not stop there, however, and whilst lowering the floor of the second storey (at the earl’s request) and rebuilding the walls, he also regularised the windows of the attic storey and replaced the old windows. He had recommended this course of action to Panmure because it would be half the price of changing them later on. But not only did he insert four new dormer windows, he further ornamented the west front with,

...crounells[coronets] and your Lops: and ladies name and the year of God in each of them with ...Roman tableings[entablature] under...for the well being of your Lops: house...if it had not been done it would look rather like a front of a stable than a house for your Lop: and noble lady...³⁸

According to Panmure, these works were undertaken “expreslie without consent.”³⁹

Intriguingly, the present day coat of arms displayed on the pediment of the west front at Brechin accurately corresponds with this description (Figure 90). The only apparent difference is the date displayed - ‘1711’ – which may be a later alteration inserted by Edward, replacing Baine’s

³⁶ NAS GD45/18/1616/24

³⁷ NAS GD45/18/1616/24

³⁸ NAS GD45/18/1616/15

³⁹ NAS GD45/18/1616/22

earlier date stone of 1693. Despite being undertaken without his client's permission, ironically this may be a rare example of Baine's work at Brechin that has survived. An additional 16 windows facing north, east and west were also ornamented by Baine with 'crounells' (coronets/pediments) incorporating Panmure's name and the year, again without consent.⁴⁰ These have not survived.



Figure 90: The coat of arms currently displayed on the west front of Brechin. Apart from the date 1711, which was probably inserted later, the content accurately represents Baine's description of the work undertaken in 1693. Photograph: author 2008.

At the same time, Baine had created a further three chambers in the attic, two with fireplaces, and declared that these rooms would provide suitable accommodation for visiting gentlemen. He then ornamented the windows facing north in a similar fashion to those on the west front, and added a series of 'blind' windows facing north and east, again to enhance the regularity of the building.⁴¹

In the same April 1693 letter, Baine asserted that Panmure had agreed verbally to the addition of a bell-house above the "great" turnpike on the north-east corner of Brechin, and "...desires me not to make it too heigh".⁴² A letter from Panmure dated April 1690, however, reveals a less than enthusiastic consent. This allowed for a roof on the turnpike such as that on

⁴⁰ NAS GD45/18/1616/18

⁴¹ NAS GD45/18/1616/18 and 22.

⁴² NAS GD45/18/1616/15

the bell-house at Panmure if Baine thought that was the best course of action in order to make the roof sufficient and water tight as per the contract,

...provyding you raise it not too high, but must assure you, as I did in my last, that I will allow no additionall accompts for it or any other work...⁴³

Clearly Baine thought it necessary to build a bell-house, and then proceeded to add four windows and a stone doorway leading from it into the 'extra' garrets above the gallery. He then ornamented it with a vane and globes. Understandably, Panmure was not impressed,

...I never consented to the making off itt...I wrote to you to be sure to make the rooffe off the great turnpike sufficient as you was oblidge by contract...if you can yet make the rooffe off that turnpike sufficient and watertight without the bell-house I shall be better content to be quit off the bell-house than have itt.⁴⁴

Baine, not to be put off, proceeded to claim that the bell-house,

...ornaments the wholl house both a far off and near hands and though your Lop: alledges that I had no order for this[.] yet ther is no knowing man but if he were brought to visit the work but he would say that ther is nothing done but what is both profitable and pleasant because it ornaments the house in the outside, and makes it more commodious within...⁴⁵

Essentially Baine was claiming that the bell-house or belvedere⁴⁶ ornamented the house externally - signalling Panmure's rank to passers-by and similar in function to those at Drumlanrig or Craigievar. It would also have provided a place for viewing the surrounding landscape as well as having a practical function as a bell-tower. Baine's argument that the bell-house made the house 'more commodious' may refer to its location over the great turnpike. He claimed it allowed for access from the great turnpike stair to the attic storey above the dining room, which Baine had also made into 'more commodious' guest chambers by adding extraneous fireplaces.⁴⁷ Baine's bell-house also appears to have survived some of the alterations

⁴³ NAS GD45/18/1616/29

⁴⁴ NAS GD45/18/1616/22

⁴⁵ NAS GD45/18/1616/17

⁴⁶ *Belvedere* - a raised turret, lantern, tower or lookout built on top of a house or within a landscape, from which a view can be obtained. Implying some degree of comfort. N. Grieve, *The Urban Conservation Glossary* (Internet Version) www.trp.dundee.ac.uk/research/glossary.

⁴⁷ NAS GD45/18/1616/18

made by Edward to the roofs at Brechin and can be seen in the eighteenth century image by Francis Grose, possibly relocated to a different position over the new ‘lantron’ stair (Figure 91).

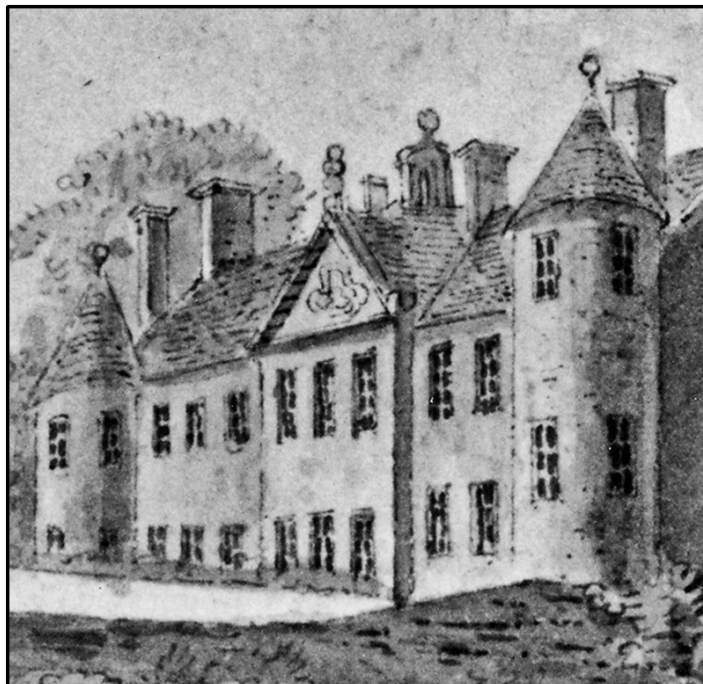


Figure 91: Detail from Francis Grose (1731-91) image showing the bell-house or belvedere added by Baine to Brechin and probably relocated by Edward. ©National Galleries of Scotland.

The above are just a few examples of the claims and counter-claims of Baine’s case against Panmure for payments owed to him. What is quite clear from the contracts, however, is that Baine was neither permitted to present accounts for work not outlined in them, nor for any additional work that had not had prior approval from Panmure. The 1691 contract stated,

It is heirby expreslie provided that it shall not be [licence?] to the said James Baine without the Earles consent first (had) obtained to make any further work about the sd house & castle nor to bring in his accompts any additional articles of work besyd those above sett down And [those] contained in the forst two former contracts.⁴⁸

Baine had disregarded these clauses, but it eventually became clear that he would receive no payment from Panmure for works not agreed to by contract.

Communication between Panmure and Baine was clearly problematic – letters were lost, and verbal instructions were forgotten or misconstrued. Panmure was frequently absent from his Angus estate, being in either Edinburgh or more often in London. This being the case,

⁴⁸ NAS GD45/18/1616/3

Panmure's wife, Margaret, probably also had some influence over the building works, and Baine referred indirectly to her in correspondence with Panmure. There is the likelihood that Brechin was originally intended as her jointure-house and that this was the original motivation for the building improvements. Countess Margaret was well educated⁴⁹ and having witnessed the building works undertaken by her parents - the duke and duchess of Hamilton - at Kinneil Castle during the 1670s, was also quite capable.⁵⁰

On occasions, Baine consulted with Panmure's younger brother Harry Maule of Kelly⁵¹ and Panmure's chamberlain John Donaldson, to verify instructions from Panmure.⁵² He also called on the masons to attest to insufficiencies found in the kitchen chimney that it was necessary to repair.⁵³ The stonemasons, however, also produced separate testaments of their work from March 1690 to June 1691 confirming that their work was not contained in either of the two contracts with Panmure, for Baine, their master, '...adventured to do it being good of his Lops: house ornamenting it outwardly & making it more convenient within.'⁵⁴ This implies that as master of works Baine directed the building programme at Brechin increasingly on his own terms, rather than working to the direct instructions and wishes of the often absent Earl of Panmure.

Though Baine had defended many of his actions, work may have already stopped at Brechin by April 1693. Baine requested that Panmure allow him to finish the 'garrets' above the principal chambers of the south range which had not at that time been joisted and floored, he feared that,

The want of jeasts and floors ...dos more harme to the slate work of the roof in one yeir than it would do in ten...for when the wind blows the great bastions puts the slate in hazard to be [turned] in that side of the house for which is contrary to the wind...⁵⁵

⁴⁹ Sankey and Szechi, 'Elite Culture and the Decline of Scottish Jacobitism 1716–1745', in *Past and Present* 17 (2001) pp.90-128.

⁵⁰ Rosalind K. Marshall, *The Days of Duchess Anne: Life in the Household of the Duchess of Hamilton 1656-1716*, (East Lothian, 2000) p.146-148.

⁵¹ NAS GD45/18/1616/17

⁵² NAS GD45/18/1616/24

⁵³ NAS GD45/18/1616/24

⁵⁴ NAS GD45/18/1616/23

⁵⁵ NAS GD45/18/1616/15

As a compromise, Baine suggested that a skilled craftsman or similar should examine the work to assess its quality and worth, recommending the earl's younger brother Harry Maule of Kelly, or Mr Robert Innes, writer to the Signet to undertake the task. Both of these men had also borne witness to the first two contracts in 1688 and 1690.⁵⁶ Instead, Panmure brought in the master mason Tobias Bauchop from Alloa, possibly prompted by his in-laws, to assess and value Baine's work independently

Bauchop was the executant architect for the earl of Mar,⁵⁷ and was also working at Kinross House, alongside his brother John, for Sir William Bruce.⁵⁸ At Kinross, he was the principal contractor for the mason work, and he continued to work with Bruce at Hopetoun, Craigiehall, Mertoun, Kinloch House, and also at Hamilton Palace.⁵⁹

To have Bauchop, a mason, assess his workmanship of what was essentially a wright's specialism must have been a humiliating experience for Baine.⁶⁰ Bauchop's diagnosis of Baine's workmanship at Brechin, dated November 1694, was certainly not complimentary.⁶¹ The structure of the roof, however, had already been cause for concern before Bauchop had surveyed it, and was obviously the subject of some disagreement between Panmure and Baine. In his 1694 petition defending his work, Baine had tried to reassure Panmure that all was well and that he had used 'strong thick broad dales' for sarking and that he could also 'cure' the other problems. Baine had stated that he would have preferred to have used the same construction for the roof as the one at Panmure, but

...you thirled [bound] me only to put upper backs which occasioned your Lop and others to look upon the roof as insufficient for which ther was partly reason because it evented [avoided] the nether backs which nou it has, and if your Lop had permitted me to put them in, I would have fastened them to the roof with plum anglets [ashlar posts?] and nailed the said anglets to the roof and jeasts as it is done at panmure house...⁶²

⁵⁶ NAS GD45/18/1616/15; 1; 2

⁵⁷ McKean, *Scottish Chateau*, p.268-269.

⁵⁸ N.H. Walker, *Kinross House*, (1990) p.23.

⁵⁹ Howard Colvin, *A Biographical Dictionary of British Architects 1600-1840*, (Yale, 1995) pp. 88-89.

⁶⁰ Stevenson, *First Freemasons*, p.63.

⁶¹ NAS GD45/18/1616/25

⁶² NAS GD45/18/1616/21

Bauchop's subsequent assessment of the roof on the south range exposed major weaknesses; likewise he found the north-west range roof equally insufficient 'both in frame and materials.' His description, which follows, was instrumental in the earl of Panmure's decision to employ Alexander Edward as architect, and the Bauchops as master masons, for his subsequent re-working of the roofs at Brechin.

After [s]ighting as narrowlie & exactlie as possible doth find that the rooffe east west of Brechin Castle is so insufficient both in frame & materials that in few years after this by so many runroofs long bridles of so small & unsufficient timber not fit for such use & so many of the cuples without feet upon the wall heads: & a great many of the feits wholly rotten & some with bridles & needleslie eiked wher ther was no occasion for them: & in that pairt of such a rooffe wher it should be the strongest below the flankers & wher the stress of the rooffe lyeth is werie small & not good: & upon the back of the maine syls is built stone burdensome walls which ocasioness a great strain to so flat a rooffe both for it & the walls, wher wind skewes of timber and sclest [slate?] thicking should have been: & some of the toppings of the cuples ar so shaft rotten & waiklie that the mortises have no strength: & many of short cuples of the runroofs ar not suffcientlie feeted & nailed to ther bearers.⁶³

Bauchop concluded that timbers of the wrong size, quantity and quality (including re-used timbers) had been used for the roofs of the south range. His report indicated that this roof was also weakened by the number of *runroofs* - sloping roofs (probably referring to the dormer windows) and *bridles* - short pieces of wood or ties across the top of couples.⁶⁴ The majority of the couples did not reach the wall heads, others had rotted and oak had been used unnecessarily. The roof was weak where the pitched roofs met at angles with additional stress being placed on the roof by unnecessary stone walls.⁶⁵ His description certainly condemns the state of the roof and Baine's work with it. Unfortunately for Baine, it also seems that his earlier warning that parts of the roof were unfinished and vulnerable in 1693 had been ignored, and the damage or

⁶³ NAS GD45/18/1616/25

⁶⁴ 'runroof' - sloping (narrow or lean to) roof, also rinruffis, runeroof in Pride, *Glossary of Scottish Building*, p.66. 'bridle' - a cross-beam, holding the ends of joists when these are not supported by a wall (Sc. 1952 *Builder* (20 June) 952). 'bridle backs', "short pieces of wood nailed across the upper end of the cupples, just below the hûnes [extremes of cupples where they join at roof]" (Sh. 1866 Edm. *Gl.*; Abd.⁹ 1936)- *Dictionary of the Scots Language*, www.dsl.ac.uk. Accessed 13 January 2010.

⁶⁵ 'flankers' - a side projection of wall or roof where pitched roofs met at an angle; valley, Pride, *Glossary of Scottish Building*, p.40.

problems Bauchop discovered may have resulted from the initial problem that Baine - an experienced and skilled wright - had actually foreseen.⁶⁶

Bauchop's solution was to shore up the south roof with 50 trees (two thirds single trees and the rest double trees) and support the gallery garrets in the west range with up to 16 more trees (two thirds single and one third double). In order to make the roof "good new and sufficient", he estimated that 100 double trees would be necessary since the roof as it stood was weakly made from old timbers and was 'creavishing [crushing] the south wall on the south west of the dyning roome....' Based on the prices paid for timber at Panmure in 1669 the single and double trees would have cost approximately £150 to £200. In addition, Bauchop noted that if the roof was shored up from the wall tops it would add even more pressure to the walls. He blamed the,

many needless storme geavels...ane unsupportable burthen to the rooffe & the bringing down the water from needless runroofs upon the north east[of the west range]...exposeth it to rain & inevitable to snowdrift...⁶⁷

Following Bauchop's appraisal of Baine's work, John Medden, a wright from Montrose, was employed to strengthen the roof in July 1695. Previously, in 1690, he had also undertaken work for the Earl of Southesk to panel five rooms at Leuchars Castle - similar to work he had completed at Kinnaird.⁶⁸ His account to Panmure for Brechin recorded his purchase of 16 double trees (£44), nine single trees (approximately £8) and 400 deals (£126). John Smith (smith of Brechin) provided him with the necessary iron nails, bolts, strips and a bridle band for £19. Medden began work with five other wrights on 5 July and was to remain there until the work was finished. Each wright was to receive 10 shillings per day for their work, and Medden was to receive an additional half a crown. The total amount for wright work at Brechin came to £120 paid on 29 June 1695.⁶⁹

⁶⁶ NAS GD45/18/1616/15

⁶⁷ NAS GD45/18/1616/25

⁶⁸ NRAS 792/5/Bundle 3

⁶⁹ NAS GD45/18/1628/1-6

The only evidence which may remain of this work is three massive timber beams that span the south-west attic of the south range at Brechin (Figure 92). These measure approximately 660 cm x 14 cm x 23 cm and have been placed above the flooring of the attic, which could be Baine's work underneath Medden's.



Figure 92: The south-west attic at Brechin Castle today. Three massive beams have been attached to the roof to strengthen it, and may be the work of Montrose wright John Medden 1695. Photograph: author 2008.

In 1690, Baine was imprisoned in the tolbooth of Edinburgh for debt, some of which was incurred from his involvement at Holyrood Palace, although his unpaid accounts for work undertaken at Glamis and Brechin also contributed to his insolvency. During the 1690s, Baine continued to petition Parliament, as well as Panmure and Strathmore, for payments. A mutual discharge, dated 6 August 1694, was finally agreed between Baine and Panmure. It concerned the payment of the original sums agreed in the three Brechin contracts that came to £8,992 plus 5½ chalders of oat meal and 1½ barrels of salmon.⁷⁰ The extra works at Brechin claimed for by Baine - some which Panmure had agreed he had consented to and others which he did not – were also priced by Bauchop in November 1694. Those consented to by Panmure he estimated

⁷⁰ NAS GD45/18/1616/13

at £392, those not consented to £310 and there was an additional itemised list that came to £255. In total these amounted to £957. These accounts were accompanied by notes from Bauchop with an explanation of the additional advantages Baine had gained from the work at Brechin; such as the old timbers ‘...which would serve for scaffolding to all his additional work...’, and old window rebatts [rybats] that required very little modification for re-use.⁷¹ However, as detailed in Part Two, Baine’s finances never recovered, and he was imprisoned again in 1694. All these payments probably came too late. Baine’s reputation certainly never recovered from Bauchop’s damning assessment of his work at Brechin, and there is no evidence that he ever worked again.

There is much less detail in the examined documents of the timber supplied and used at Brechin than there is for Panmure and Glamis. There are a number of reasons for this. Firstly, the nature of the dispute between Baine and Panmure at Brechin was mainly over contractual details rather than costs of the raw materials, hence the survival of the contracts and the subsequent claims and counter-claims. Secondly, it can be seen as a reflection of Baine’s changing role; from timber merchant and wright at Panmure to main contractor and master of works at Brechin where he was responsible for the entire mason, wright, plaster and glass work.⁷² At Panmure, responsibility for the timber supplies was the earl’s; he subsequently purchased timber from Baine and it is the records kept by Panmure’s chamberlain which survive. The sources for Glamis that contain the most detail about how timber was used there are those that survive from the period when Baine was working there as main contractor in 1670s. Most of the timber for Glamis was purchased by Strathmore himself and brought directly from Norway on board his ship the *Lyon*. At Brechin, however, a price for the work was agreed between client and contractor, and the records which survived do not record many details of timber purchased by Baine.

⁷¹ NAS GD45/18/1616/26

⁷² NAS GD45/18/1616/3

Nonetheless it is possible to infer from the documents some understanding of the timbers required for Brechin. The nature of the work, such as peeling back walls by three feet and raising floor levels implies the use of new longer span timbers for the replacement of roof timbers and flooring joists. Panelling, skirting boards, doors, timber partition walls, shutters, sash and casement windows would have required planking (wainscot and deals). In the first contract Baine was to furnish the timber and nails, and Panmure was to arrange transport to Brechin, probably from Dundee.

The second contract specified broken jointed floors for the drawing room and timber cases of wainscot for the windows and shutters. A total 26 windows were required although probably not all of these were sash windows. Panelling was described as ‘extraordinary lyneings’ and was specified for the dining room, drawing room and bed chamber.⁷³ For the new roof on the south range, trees, couples and baulks were listed. No quantities or sizes were given but the span from the north wall to the south wall on the southern range at Brechin, at least according to Edward’s drawings, was approximately 18 feet (5.5 metres). From this we can estimate that timber lengths of 20 feet were required for spanning the south range.

In the third contract, Panmure was to ‘furnish’ the joists for the new room or ‘laigh dining room’ immediately below the dining room on the principal floor, as well as providing for their carriage. Baine was to provide the scaffolding and timber for propping up the whole south range whilst the vaults were removed, presumably using old timbers reclaimed on site. In contrast to Glamis and Panmure, no timbers were sourced from Panmure’s own estates for the repairs and modifications at Brechin.

Timber prices are mentioned in an account for 18 joists used above the dining room for which Baine charged £45 or £2 10 per piece. When compared with double or great trees bought for Panmure House this seems to have been a fairly standard price, but if these ‘joists’ were actually 12 ell beams, then they cost twice as much. This cargo of timber also took a curious circuitous route before it finally arrived at Brechin. Baine had obtained them from Burntisland,

⁷³ NAS GD45/18/1616/2

and due to the scarcity of timber at that time at Leith (although not dated, the document refers to work in the third contract of 1691), the timbers were first taken there and then on to Montrose. Perhaps Baine had hoped to obtain a better price by selling them at Leith? The higher price may have been the result of scarcity of timber.⁷⁴ These same 18 joists were listed by Bauchop in his appraisal of Baine's work in 1694 as being worth only £35, suggesting that the joists were not great or double trees and Baine had overcharged his client.⁷⁵ Baine had referred to the 'roof' of the dining room in his 1694 petition (possibly written after Bauchop's survey) to the Earl of Panmure, wherein he again pointed out the difficulties he had in obtaining timber at that time.

...ther was no fir timber to be got for money which occasioned me to make use of some of the old oak timber, which I am conscious that though it has not the favour yet it has the substance of ability to last as long and longer than any fir timber, so that ther is no grand reason to complain of the roof excepting that the oak timber aforesaid looks not so eye pleasant...⁷⁶

Panmure had requested itemised lists with prices for all of the extraordinary mason and wright work that Baine had charged in the accounts, and it was these prices that Bauchop considered in his appraisal of the work undertaken at Brechin. For example, Baine had charged £129 for an additional 17 *planted* and *bound* doors, plus a further £25 for five plain doors.⁷⁷ Bauchop's response was a list of 13 doors, individually priced, from £5 for a door to the well to £14 for the timber door in the 'great entrie', which came to a total of £81. He added a note regarding the construction of the 'double doors':

...all the double doors ar but halfe nailed & therfor off the less [value] & that the Doore of the Earls Closett & on to the stoole roome of the bedchamber ar not additionall work but pairts of these rooms contained in the Contracts.⁷⁸

Had Baine charged Panmure intentionally for items which he knew were included as part of the contract, or was it a genuine misunderstanding? Had he started to cut corners because of his

⁷⁴ NAS GD45/18/1616/33

⁷⁵ NAS GD45/18/1616/26

⁷⁶ NAS GD45/18/1616/21

⁷⁷ NAS GD45/18/1616/18

⁷⁸ NAS GD45/18/1616/26

increasingly restricted finances? One item that Bauchop and Baine did agree on was the price for the ‘new mountepost in the round bastion...’⁷⁹ plus globe and workmanship. In this case Baine’s price was £01 05 sterling, and Bauchop assessed it as the equivalent - £12 Scots.⁸⁰

The principal floors at Brechin were laid using broken joints, in the same way that Baine had laid the floors at Panmure and Holyrood. It was a much more complicated way of flooring, but it allowed wider spans. At Glamis, Baine’s former apprentice Andrew Wright had installed floors there using this method. Baine was very proud of such floors, which appeared ‘as if ... they were all in one bourde’.⁸¹ He made a similar claim for his workmanship at Brechin, except that he considered these floors as even better than the floors at Holyrood and Panmure since ‘...ther is none like them in the kingdom...’⁸²

Some of the additional wright work was undertaken following verbal orders from Panmure which, according to Baine, he had forgotten. A letter to Panmure listed some of them,⁸³ and included the unusual item (also mentioned by Dunbar)⁸⁴ of the double joisting two closets, and then flooring both the upper and lower joists to create a secret under floor compartment for ‘hideing goods betwixt the floors in time of trouble.’ This was not really an item to be forgotten, but perhaps one that it was preferable not to have written about in a contract. In fact, since Baine’s contracts were usually signed and agreed in the presence of both client and contractor there was a strong likelihood that additional supplementary instructions and descriptions were agreed to verbally with Panmure.⁸⁵

The lessons encountered at Castle Lyon,⁸⁶ such as ordering the wrong sized flooring joists after thinning the walls, seem to have been learnt at Brechin, but nevertheless work was frequently re-done because of unanticipated changes to the original contracts and room sizes - some which may have been based on the unforeseen poor condition of the building. Rooms

⁷⁹ NAS GD45/18/1616/18

⁸⁰ Scots pound: one pound Scots equalled 1s 8d sterling.

⁸¹ NAS GD45/18/588 and 594-6

⁸² NAS GD45/18/1616/15

⁸³ NAS GD45/18/1616/20

⁸⁴ Dunbar, ‘Brechin Castle, Angus: I’, *Country Life*, p.379.

⁸⁵ M. Howard, *The Building of Elizabethan and Jacobean England* (New Haven and London, 2007) p.107-108.

⁸⁶ NRA 855/148/1/ 38 p.3

were widened, and floors raised or lowered, without the implications for additional materials and workmanship being assessed. In one case, approximately 23 ells (216 metres) of additional timber was required for the uppermost gallery and his Lordship's dressing room in the west range,

the peiling hald ane ell off the thickness of the sidewall that wholl lenth of the gallerie and half ane ell off the thickness of the gabell of the sd gallerie which is now my Lords dressing room which occasioned ten elne of floor over and above what is contained in contracts ... is £2 10 sterling.⁸⁷

Wainscot timber used for panelling was probably pine, although this is not proven. At Panmure, for example, it was more likely to have been oak, though in the latter part of the century good quality pine or fir timber was being used too, and wainscot began to be used as a term for panelling rather the type of timber.⁸⁸ The window cases at Brechin were made from wainscot, which in this case probably meant oak, since hardwood is more robust and weatherproof. This would also have been used for the lower shutters of the casement windows of the lower status rooms. There is a detailed specification of the panelling proposed for the principal rooms at Brechin, as well as all the doorways linking these rooms together; all scuntions and lintels were to be lined with timber, as were the walls between the window scuntions of the dining room; and this could be either oak or good quality pine,

...the ffeinisheing of the scunshione of the doore of the dyneing roome to the east scunshione of the windou in the dyneing roome with tuo broadpeice of lyneing betwixt the scunshions of the three windous with ane broad piece of lyneing from the west syd scunshione of the dyneing roome to the gabell...⁸⁹

If the panelling was pine it may have been painted with trompe l'oeil geometries in a similar fashion to some recently discovered at the House of Binns (Figure 93). If oak it was probably left plain as the Dutch 'wenscot planks for Lying' were in the small drawing room at Kinross House.⁹⁰

⁸⁷ NAS GD45/18/1616/20 and NAS GD45/18/1616/18

⁸⁸ Louw and Crayford, 'A constructional history of the sash-window c.1670-c.1725: Part Two', p.191.

⁸⁹ NAS GD45/18/1616/8

⁹⁰ Walker, *Kinross House and its associations*, (1990)p.35



Figure 93: Painted panelling at the House of Binns. © Historic Scotland

In Panmure's dressing room, which was to be wholly lined, 'ane timber cornice' instead of a plaster cornice, architrave and frieze was to be added to finish the room.⁹¹ However, according to a later letter in 1693, it would appear that Baine decided to make a (plaster) cornice, frieze and architrave for his Lordship's dressing room, but sought nothing in return, '...but the continuance of your Lops kindness....' This extra was a means to 'ingage your Lops kindness and your noble ladies...'; he was obviously keen to remain in favour with Panmure despite the continued dispute over the payment of additional costs at Brechin.⁹²

One of the bed chambers on the second storey (above her Ladyship's chamber) was lined with panelling between the doorway and the chimney. It also had 'upright standing dales in the corners for stenting [stretching/extending] the hangings....'⁹³ This may have been similar to a panelled room at Ethie Castle, also in Angus, where three walls have been lined with narrow vertical deals, probably for the same purpose of mounting hangings (Figure 94).

⁹¹ NAS GD45/18/1616/17

⁹² NAS GD45/18/1616/15

⁹³ NAS GD45/18/1616/18



Figure 94: Room at Ethie Castle in Angus, panelled on three sides with narrow vertical timbers and probably covered over by hangings. Since the opposite wall, which has a fireplace and window, would have been visible it was lined with wider panelling. Photograph: author 2007.

The internal walls that were not lined with timber panelling at Brechin were, by contract, to be plastered. This included the passages in the east gable and all the rooms on the ground storey of the south range. Baine submitted additional accounts for both the plastering and whitening of these walls, an expenditure which was immediately refuted by Panmure, ‘...as for whitning it cannot be said that the plaistiring off the walls are finished till they be whitened....’⁹⁴ Baine had made a similar claim for extras at Panmure regarding the ‘whyting of the whole rouses which I am not oblidge to doe...’ charges which he later retracted.⁹⁵

Plaster of the ceilings in the principal rooms was executed in plain work with ‘ane handsome cornis about this rouses’. Baine’s men selected and supplied timber deals for all the scaffolding, and the laths and nails required for the plastering work.⁹⁶ The supply of laths for plastering ceilings was referred to repeatedly *e.g.* ‘plaistering the roof of the closet above my Lords closet with furnishing sawen timber for lathing therto’⁹⁷ and ‘...lathing the roof of the chamber beneath the balgonie with the furnishing of dales for lathing....’⁹⁸

⁹⁴ NAS GD45/18/1616/22

⁹⁵ NAS GD45/18/594-4

⁹⁶ NAS GD45/18/1616

⁹⁷ NAS GD45/18/1616/18

⁹⁸ NAS GD45/18/1616/17

There is no mention of ornamental relief plaster at Brechin. The only decorative description is given for a cornice of the Ionic order in the room above her Ladyship's bedchamber. The stipulation of the Ionic order suggests that this may have been a bed chamber intended for use by high status guests,⁹⁹ particularly when compared to the description for '... one litle cornise round about my ladies woman's bedchamber.'¹⁰⁰

Some of the plaster work had to be re-done following the alterations to floor levels and room sizes. One example was the drawing room, where the ceiling was raised one ell (94cm) and meant that the cornice had to be demolished.¹⁰¹ The cost for re-doing similar work in the second storey came to £1 sterling (£12 Scots).¹⁰²

Partition walls at Brechin were made by '*warping*'¹⁰³, which referred to laths being woven together and then plastered, similar to those at Glamis.¹⁰⁴ Significant quantities of laths would also have been required for plastering the ceilings, again similar to Glamis, where deals were sawn into laths by Baine's wrights on site rather than purchased pre-fabricated.

One of the key features in the remodelling of Brechin was the inclusion of many more windows, but unfortunately no dimensions are given for any of them. The first contract with Baine made in 1688 stipulated that seven sash windows were to be made and placed on the principal floor of the south range, facing south over the river South Esk.¹⁰⁵ The subsequent contracts in 1690 and 1691 included more windows - mainly casements for the lower status floors, similar to Kinross House where sash windows were put in on the principal floors with casements in the upper storey.¹⁰⁶ In June 1690, Panmure wrote to Baine to confirm that the plaster work would not be started until the windows had been glazed. He used the opportunity to also ensure that James Mugg, a glazier in Brechin, would not be used for the glazing work,

⁹⁹ NAS GD45/18/1616/18

¹⁰⁰ NAS GD45/18/1616/17

¹⁰¹ NAS GD45/18/1616/8

¹⁰² NAS GD45/18/1616/18

¹⁰³ NAS GD45/18/1616/18

¹⁰⁴ NRA855/148/1/44 -p.11.

¹⁰⁵ NAS GD45/18/1616/1

¹⁰⁶ Walker, *Kinross House* p.75.

although he did not give his reasons why.¹⁰⁷ The sash windows would have probably been made using oak wainscot timber for strength and hardness. At Ham House in the 1670s, Spanish oak had been used for the Duke of Lauderdale's new and innovative sash windows. In Scotland, however, it was more likely to have been Norwegian oak, or oak from Germany that had first been processed in the Netherlands.¹⁰⁸

In the second contract, five wainscot windows with shutters below were specified, three to be placed in dormer windows on the upper storey of the south range. There were instructions for these to be aligned above the sash windows of the dining room below for regularity and structure. Three additional sash windows were also required on the south range; one for his lordship's dressing room and two for the room above her ladyship's closet. Two oval windows for letting in light were also included: one for a closet and one for the north side of a bed chamber (possibly the bed chamber in the eastern end of the second storey of the southern range). Two windows of *close glass* for two passageways were to be inserted on the south range and may have been a type of 'private glass' that was not completely transparent but would have permitted enough light in to illuminate the passages.¹⁰⁹

The 1691 contract required two additional windows to be struck out on the ground floor of the south range for the new room beneath the Great Dining Room. These were wainscot case windows that were to be placed beneath the furthest east and west windows of the dining room above. This gave the south range a structure and visual balance defined by the windows alignment and spacing, creating a new facade overlooking the river (Figure 95).¹¹⁰

¹⁰⁷ NAS GD45/18/1616/7

¹⁰⁸ For a discussion of the definition of wainscot and the development of the term and its use in sash windows see Louw and Crayford, 'A constructional history of the sash-window c.1670-c.1725' p.191.

¹⁰⁹ Ibid., p.196.

¹¹⁰ NAS GD45/18/1616/3



Figure 96: Brechin in the eighteenth century. Watercolour painted by Francis Grose (1731-91). This shows the west front with the regularised southern range, three floors of large windowed rooms and Baine's balcony overlooking the river and the problematic south-west gable. ©National Galleries of Scotland.

Baine described the west front as being the 'front'¹¹¹ of the house, which was probably why he inserted many more sash windows there rather than casements: 16 of these on the building's west front, three in the first storey (*i.e.* the principal storey above the kitchen), five in the second storey and another four in the third storey (named by Baine as the fourth storey), as well as two in Panmure's closet and two in the room above that.¹¹² The windows inserted in the third storey would have been dormer windows similar to those on the roof of the south range. Baine's earlier work at Castle Lyon may have influenced his decision to add these 'extra' windows to create further guest rooms in the attics at Brechin (Figure 96). As well as defending these additional dormer windows on the grounds that they benefited the aesthetic regularity of the house, Baine declared that they served an essential function,

...the necessity of the stormeings besides that they greatly ornament the house they are special remedies to keep the rain that comes off the slates from troubleing the windowes below for the rain comeing down be the sides of the stormeings though the wind be never so violent yet it can not leat in the rain upon the windowes which without stormeings it would undoubtedly do...¹¹³

¹¹¹ NAS GD45/18/1616/24

¹¹² NAS GD45/18/1616/16 and 18

¹¹³ NAS GD45/18/1616/24

The number of windows defined as extras totalled 40, including three blind windows facing north.¹¹⁴ Baine claimed these windows were all necessary so that Brechin would appear 'uniform and regular'.¹¹⁵

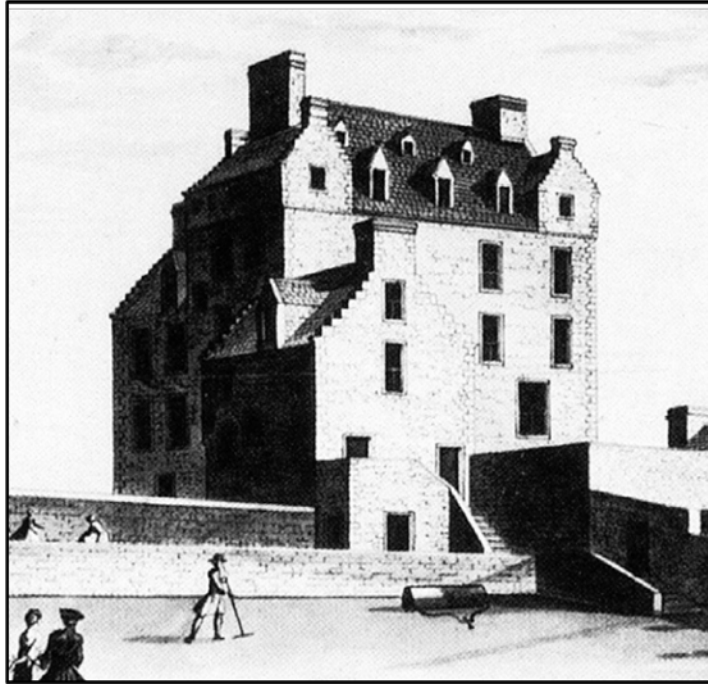


Figure 96: Detail from John Elphinstone's drawing of Castle Lyon showing the *stormeings* or dormer windows. ©RCAHMS.

The 'extra' windows cost £24 per sash window on the first and second storeys of the west front, £13 04 for those in the attic storey and for the rest £12 per piece.¹¹⁶ However, Tobias Bauchop valued Baine's work substantially lower - the sash windows on the second and third storeys @ £18 - and he excluded the sash windows added to the attic storey, which implies that there was little question that they were executed without permission, (either verbal or written) from Panmure. Bauchop did, however, agree the price of £12 per piece for the smaller sash windows both in and above Panmure's closet.

At that time, Bauchop was the principal contractor at Kinross House (built 1686 -1693) for Sir William Bruce, whose wright work was undertaken by Alexander Eizat of Edinburgh

¹¹⁴ NAS GD45/18/1616/16

¹¹⁵ NAS GD45/18/1616/24

¹¹⁶ NAS GD45/18/1616/18

(Mary's Chapel). Eizat presented his accounts for the Kinross windows in January 1690 (Figure 97).¹¹⁷

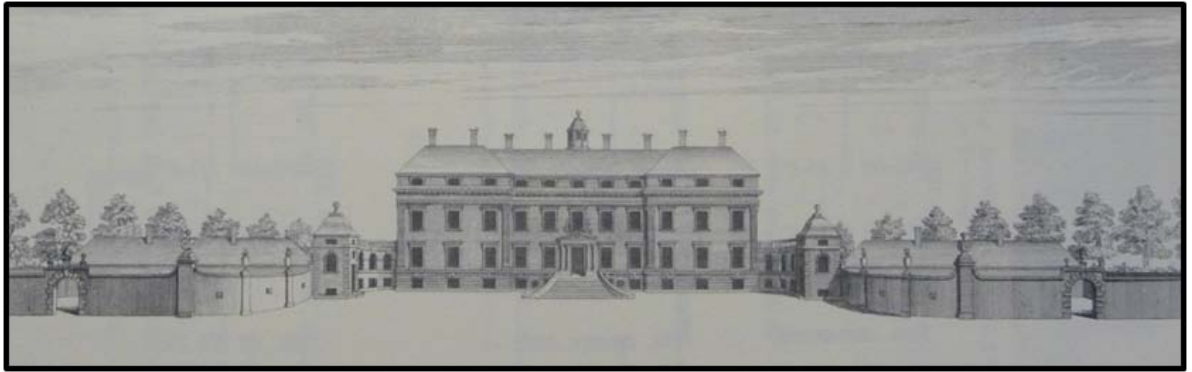


Figure 97: Kinross House built by Sir William Bruce 1686-1693, showing the entrance facade and sash windows. William Adam, *Vitruvius Scoticus*, James Simpson (ed), (Edinburgh, 1980) Plate 62.

As at Brechin, there were both sash and casement windows; 25 sash windows for the principal storey and 19 casement windows for the upper storey. The sash windows there were priced at £6 per piece, one third of the price of those at Brechin. Either the windows at Kinross were smaller, or Eizat's workmanship was considerably cheaper than Baine's. Casement windows at Brechin also cost more than those at Kinross; Baine charged approximately £6 per piece, at Kinross Eizat charged only £3. Bauchop, likewise, valued, 'ane litle caise window in the closet of the old rounge' at Brechin at only £3.¹¹⁸ Separate accounts exist for the ironwork and glazing at Brechin, and thereby imply that Baine's prices for windows there were exclusive of these components. The overall impression is that Baine was expensive, but he was also installing windows into an existing building probably requiring more workmanship.

The second contract with Baine, dated 5 March 1690, stipulated that English glass was to be used and that '...the glass in the sasch windows be diamond cutt and sett in lead.'¹¹⁹ This is an unusual description for sash windows, since sash windows tended to have squared glass set in wooden, usually wainscot frames such as the example shown in Figure 98 from David

¹¹⁷ Walker, Kinross House, p.75.

¹¹⁸ NAS GD45/18/1616/25

¹¹⁹ NAS GD45/18/1616/2

Crawford's house, Hamilton, Lanarkshire c. 1696.¹²⁰ The use of lead comes¹²¹ suggests that these windows may have been a hybrid of the old hinged casement windows and the newer sliding sash windows.



**Figure 98: Sash window c.1696 from David Crawford's house, Hamilton, Lanarkshire.
© Low Parks Museum, Hamilton.**

The account of glass wrought by Mr Anderson (of Montrose) for the windows at Brechin and measured by John Donaldson, Panmure's factor, recorded 28 windows that conformed to the contract. These used approximately 548 feet of glass. A further 48 windows listed were not by contract and contained approximately 500 feet of glass. The glass was priced at 4 shillings per foot and totalled approximately £210. Panmure had, however, supplied approximately £100 worth of glass himself and in this instance Robert Baine (Baine's nephew) supplied the remaining £110, of which £22 was owed to a Mr Anderson who had brought glass from Montrose. Interestingly, the list of 76 windows and glass indicates that there were two galleries in the west range – an upper and lower one (not just one as suggested previously by

¹²⁰ Louw and Crayford, 'A constructional history of the sash-window c.1670-c.1725.'

¹²¹ Comes - a small grooved bar of lead used for framing the glass in lattice windows: chiefly in *pl.OED*. Accessed 26 May 2009.

Dunbar).¹²² Three turnpike stairs - the great turnpike stair (entrance stair at the south east corner of the west range), east and south turnpike stairs, - all had been given glazed windows: three, four and five respectively, none of which were in the contracts.¹²³

Baine had submitted two accounts for ironwork at Brechin. The first for £121, dated 1691, included glass bands he had collected from Kirkcaldy, hooks and hinges for hanging doors, nails, casement bands, locks and the repairing of the well bucket. The second, very similar, came to £130, and included 36 feet of window rods, 20 stone of iron used for glass bands, more locks, including one for the kitchen door and hangers for the bell house. This account probably recorded the prices for iron work specified in the contract. As would be expected, the expenses for iron work also extended to sharpening and mending numerous pick axes and making quarry wedges for the stone masons.¹²⁴

Panmure was to provide all the stone, lime, and sand necessary for mason work at Brechin. Stone was brought from a nearby quarry and additional stone was taken from around the existing buildings at Brechin, ‘...wineing stones in the quarrell ...and about the house’¹²⁵ reducing transport costs. Brechin, Panmure and Glamis all lie in an area of Devonian rocks collectively known as Old Red Sandstone, locally intruded by volcanics. There are three main types of rock which could be sourced locally for building materials: sandstones (ashlar blocks), flagstones (roofing slates) and whinstone (rubble). The sandstones vary considerably in colour and grain size, but Panmure and Glamis are situated in an area characterised by generally grey-brown sandstones (Dundee Formation). Brechin is in an area characterised by sandstones which vary from red to purple-grey (Arbroath and Red Head Formations). The site of Panmure House itself is on volcanic rocks (andesite or "whinstone") unsuitable and too expensive for shaping into regular blocks for masonry. There are large and historically significant sandstone quarries close to Brechin, Glamis and Panmure (*e.g.* Wellbank). Although it is not known if any of these quarries were active in the seventeenth century, it is unlikely that sandstones were transported

¹²² Walker and Dunbar, ‘Brechin Castle, Angus: I’, *Country Life* p.379.

¹²³ NAS GD45/18/1616/38

¹²⁴ NAS GD45/18/1616/41 and 42

¹²⁵ NAS GD45/18/1616/14

over large distances when there are abundant sources of masonry quality within a few miles of each house.¹²⁶

Any waste materials from the quarry and from cutting stones at the house were sieved or riddled for sand and lime for use in the building works. Baine, however, claimed an additional payment for this work, ‘...I caused [riddle] all the rubbish by which I gained more lime and sand then all the price of the stone for ther was little or no sand carried but only to the slaters’¹²⁷ Elsewhere, he noted that he had obtained seven or eight chalders of lime sieving through the rubbish.¹²⁸ He recorded some of this work in an account to Panmure wherein he calculated that this work was worth £600, but he was prepared to accept, ‘...but two barell of Salmond and ane Chalder of meall.’¹²⁹ Baine was not specifically instructed to undertake this work by contract, but since Panmure had agreed in the contracts ‘...to furnish stones, lyme and sand necessari[re] for compleiting the work...’¹³⁰ this may have been a legitimate expense.

Other accounts for hewn stone work were priced either by the cartload or by linear measurement and although Panmure was responsible for furnishing the stone, it was clearly Baine who organised and oversaw the supply. Stone hewn from March 1688 to June 1690,¹³¹ measuring a total of approximately 5,000 feet at a cost of £6 sterling per hundred feet was for the lintels and jambs of 26 chimneys and eleven *stormeings* of gables for chimneys and windskews.¹³² Stones cut for architraves, friezes and cornices and one plain ‘aslar’ above the cornice with two stone caps above it were also included, as were additional quoins for the bell house (possibly a centrepiece facing into the east court), the passageway at the east end of the south range (ground floor?) and stones for the ‘hewen tablen’ on the north face and west front of Brechin. Work not contained in the contract was charged at £300 sterling (£3,600 Scots).¹³³

¹²⁶ Pers.comm. geologist Paul Brockbank.

¹²⁷ NAS GD45/18/1616/18

¹²⁸ NAS GD45/18/1616/6a

¹²⁹ NAS GD45/18/1616/14

¹³⁰ NAS GD45/18/1616/1

¹³¹ NAS GD45/18/1616/17

¹³² Windskew- smoke deflector in chimney/prevent down draughts

¹³³ NAS GD45/18/1616/17; in NAS GD45/18/1616/18 this sum is given as £200 sterling

From June 1690 to June 1691, Baine employed Thomas Kerr to win the stone for the balcony, two windows and doors, hearths and stone walls, and also for the doorway to the new laigh hall. Significantly this doorway was to be of stone and similar to the Great Hall at Kellie Castle and Ethie - although these were executed in timber. The decoration was described in some detail,

... of the Ionich order the rebuts of the entire door in larger moolding with pillars on each side therof with base pedestall, capital and architrave and its order, frieze with a rich Cornise and crounell peice the cornice with dentillions as well as with [bridge] castes....¹³⁴

In total, this stonework required 633 cartloads costing one shilling and sixpence each, for a total of £47 05 sterling (£567 Scots).

Another account, although for work 'not contained in any contract betwixt the Earle of Panmure and James Bayne wright master of the work,' included a breakdown of the men's wages.¹³⁵ This work, undertaken by stonemasons and barrowmen, was based on a six day week and the total number of days worked. Twelve masons worked 311 weeks and one half day at twelve shillings per day amounting to £1,120. In addition, two apprentices worked 79 weeks at £1 10 per week (eleven shillings each per day), which totalled £118. Six barrowmen worked for 189 weeks for approximately £260, making their average daily payment less than 5 shillings, clearly demonstrating the difference in wages between skilled and unskilled workers. This gave a total of £1,498 in labour costs to which were then added costs of furnishing stone totalling £247,¹³⁶ indicating that stone was generally a cheaper building material than timber.

In an attempt to save time, when Baine realised that Panmure intended to embark on further building works at Brechin he had his stonemasons continue to prepare stone in anticipation of those works. However, this also included works for some of Baine's own embellishments at Brechin, making it difficult to separate costs for work that was done by contract and that which was not.

¹³⁴ NAS GD45/18/1616/17

¹³⁵ NAS GD45/18/1616/18

¹³⁶ NAS GD45/18/1616/18

I contiued the masons heweing in the time that I was working the wright work of the first contract because I knew that the mason work if it had not been hewen befor hand would have hindred the ongoing of the work in the second Contract.¹³⁷

Baine clearly knew that there was further building work to be done, but apparently once again failed to inform Panmure of his actions at the time. If the accounts submitted by Baine were deliberately ambiguous, then he was clearly attempting to conceal work not specified in the contracts and certainly guilty of malpractice.

Conclusion and analysis

Brechin Castle in the 1680s had become a lesser building, used mainly as a summer lodging by the Maule family. When the fourth earl succeeded in 1686, and married Margaret - youngest daughter of the Duke of Hamilton - the following year, the couple turned to Brechin equipped with a substantial dowry. From modest ambitions for initial repairs, their aspirations grew to a significant refurbishment of the entire building, with the probable intention that Brechin was to become Countess Margaret's jointure-house.

At Brechin, a new state apartment was created on the principal storey of the south range with a balcony overlooking a terrace and the river below. Immediately beneath this a new laigh hall was built on the ground floor, with an entrance decorated with an Ionic architrave carved in stone. Panmure's own apartments in the west range were re-decorated and enlarged, along with two galleries where wall thicknesses were also reduced and sash windows inserted. These building works and modifications undertaken by James Baine represent a significant phase in the development of the house. Baine not only added the new state apartment and hall, but also undertook to create a regular and balanced building, an aim very similar to the earl of Strathmore's building works at Glamis.

Baine was engaged in 1688 as 'wright: master of works' at Brechin, and was the senior master craftsmen in attendance. As a wright he was suitably qualified and experienced for the

¹³⁷ NAS GD45/18/1616/23

role, but Baine clearly had the greater ambition to take on the role of architect, possibly to raise his profile and revive his failing business interests. In the pursuit of regularity and balance, Baine determined the design of the house. It was this ambition that led in part to the many extras and embellishments that Panmure had not sanctioned, and which he quite rightly refused to pay for. The disagreements over payment and sub-standard work coincided with Baine's descent into bankruptcy and imprisonment. In the end, Brechin exposed Baine's fundamental weakness as a main contractor—insufficient credit brought about by the Crown's longstanding reluctance to pay him for Holyrood. Once it became apparent that he was not likely to ever receive any payment for this work in the 1690s, Baine's cost-cutting measures at Brechin became inevitable, probably resulting in the bad workmanship that Bauchop discovered in the roofs.

As Master of Works, Baine was responsible for overseeing all the trades and craftsmen involved with the building work, bringing his own wrights from Edinburgh to Angus, where on occasion, their work was overseen by his nephew Robert Baine. Evidently Baine relied on his nephew's presence to oversee the works at Brechin following his own imprisonment for bankruptcy in 1690 and 1694. Other craftsmen from different trades, including masons, were sourced locally, but - unlike Glamis - there was no evidence of foreign craftsmen working at Brechin.

Baine also supplied the iron work, some of which was purchased from Kirkcaldy in Fife. The window glass was largely provided by a glazier in Montrose with smaller amounts also supplied by Panmure and Baine's nephew. The provision and transport of stone, lime and sand remained Panmure's responsibility, quarried locally and brought to Brechin on carts, but organised and overseen by Baine.

Preliminary work included investigating and repairing structural weaknesses in the south range, and inserting sash windows in the principal chambers of the first floor. As work progressed more problems emerged. The later contracts specified the raising and lowering of floors and ceilings to remove height differences; rebuilding turnpike staircases to meet floors at new levels; making rooms larger by cutting back the original walls (in some places by three

feet) and installing additional sash windows to not only give the building more light, but also to create a more balanced and regular external appearance.

There was little evidence in surviving documents from Brechin to provide a comparative analysis of the purchase and supply of timber with Panmure and Glamis. Baine was to supply timber and re-use old timbers, but specific prices were only given when he is called to account by Bauchop for the construction of the roofs. At Brechin, only completed items of work were recorded in the accounts submitted by Baine, rather than the purchases of individual timber components. This arrangement was akin to that at Glamis where he had been main contractor. The timber was used for floor joists and planking, panelling, windows, doors, ceiling laths, partitions and scaffolding. Baine employed his preferred broken jointed method for flooring at Brechin, and all the principal rooms were fully lined and panelled with timber with plain plaster ceilings. Sash windows were provided for the new state apartment and the earl's chambers, and older-style casement windows with shutters below for lower status rooms.

In his desire to take on the role of architect, Baine became over ambitious, going far beyond his client's brief. He built a bell-tower over the great stair, added dormer windows embellished with decorative pediments to the attic storey, put in a coat of arms on the west front, created guest rooms in the attic requiring additional chimneys, and installed additional windows, both blind and sash. He claimed that these additions were required to prevent Brechin resembling a 'prison' or 'stable.' That Baine instigated and directed these extras undertaken by his men without authority implies that he must have had an overall design in mind – implying that he had ambitions to take on the role of 'architector'. He repeatedly stated in correspondence that his prime objective was to create 'uniform and regular' facades.

Baine's work at Brechin has, until now, been largely dismissed; overshadowed by Alexander Edward's subsequent refinements and re-orientation of the existing buildings and their integration with the grounds. No doubt the alleged sub-standard roofs played a large part in this (and the apparent need for later work), coupled with endless disagreements with Panmure

over payment. Consequently some of Baine's additions, such as the 'guest rooms' and dormer windows in the attic storeys were quickly removed by Edward.

Panmure's choice of Bauchop to assess Baine's work was significant for two reasons. Firstly he was asking Bauchop - a mason-architect – to report on a wright, and secondly Bauchop was also working as the main contractor for Sir William Bruce's new house at Kinross, making it convenient for Panmure to then employ him at Brechin. Panmure would have been acutely aware of Baine's financial situation, which may be another reason for his employment of Bauchop and Edward to also build the two flanking courts at Panmure House. He had already obtained advice from Bruce concerning these necessary 'reformationes' and was quite clearly keen to replace Baine with Bauchop as soon as possible. This would prove fatal to Baine's business. Despite being a wright with all the necessary skills and knowledge required for the building works at Brechin, any chance of Baine being recognised as an architect by his contemporaries was destroyed by Bauchop's damning assessment of his work. Baine's discharge from Brechin marked the end of his career. Financially he was ruined, and he never worked again.

CHAPTER 12: CONCLUSION

Whilst recognising the importance of Scotland's trade with Norway for timber in the late seventeenth and eighteenth centuries, earlier studies addressed neither the implications of Norwegian timber specifically as a new source of building material, nor its impact upon Scottish construction.¹ By considering the significance of the timber trade with Norway from this perspective, a much clearer understanding of its development from the late sixteenth century onwards has emerged, and an increased application of timber in architecture and building works in Scotland during the seventeenth century has now been firmly established. This trend corresponded with a move away from the long-established prominence of master masons in the traditional hierarchy of the building trades, towards a rise in the authority and influence of master wrights, and coincided with the emergence of Norway as the principal source of timber for building works. The identification of this major development suggests that, albeit for a short time in the late seventeenth century, as Norwegian timber replaced stone as the key building material used in Scottish great houses, the mason was eclipsed by the wright. It was thus a key factor in the increasing status and authority of wrights in Scotland, as can be seen through the career of James Baine. For the latter's work at Panmure, Glamis and Brechin reveal that as the wright's skills became more central to the building process, their power and authority within the building crafts likewise increased.

The two main issues addressed by this research were, firstly the significance and use of Norwegian timber, and secondly the changing role and status of wrights. However, in the course of this study, unexpected material concerning the development of the Scottish construction industry also emerged, whose implications will be discussed at the end.

¹ T.C.Smout, *Scottish Trade on the Eve of the Union 1660-1707* (Oliver & Boyd Ltd, 1963).); 'Some problems of timber supply in later seventeenth century Scotland', *Scottish Forestry* 15 (1960); *Scotland and Europe 1200-1850* (Edinburgh, 1986) and 'The Norwegian Timber Trade from the Scottish Perspective', in *Timber and Trade: Articles on the timber export from the Ryfylke area to Scotland and Holland in the 16th and 17th centuries*, (Fagrapport, nr 1: Lokalhistorisk Stiftelse, 1999). See also Alan Thomson, 'The Scottish Timber Trade, 1680-1800,' Ph.D thesis, University of St.Andrews, 1990.

From the late sixteenth century onwards, Norwegian, Danish and Scottish evidence has shown that timber imports from Norway were displacing Scotland's earlier reliance on timber from the Baltic. For Scottish skippers and merchants participating in the timber trade, collecting timber from the fjords and forest-farms of western Norway was a relatively straightforward process. Skippers took advantage of the close proximity of the Norwegian coast, making several voyages annually to meet the ever growing demands for building materials in Scotland. By favouring this source of timber they avoided the additional costs accrued by sailing through the Danish Sound, the intermittent complications of warfare, and the limitations of harbours of the Baltic Sea frozen in winter.

The Øresund tolls revealed a steady decrease in the numbers of both Scottish and Baltic vessels carrying timber from Baltic ports to Scotland from the beginning of the seventeenth century, and an overall decline in cargoes of oak timber (klapholt and wainscot) carried westwards.² Further confirmation of this trend was found at Dundee, where by 1645, 93% of all timber cargoes containing deals had originated in Norway,³ despite a growth in the export of deals from the Baltic to Scotland during the same period.⁴ One of the preferred Norwegian imports was standardised timber baulks, the greatest demand at Dundee being for nine ell baulks (approx. 18 feet), followed by those measuring twelve ells (approx. 26 feet).⁵ It was these in particular that were to prove crucial to change in Scottish architecture and building construction.

The introduction of the water driven sawmill to Norway was key to the development of trade with Scotland, since it could mass produce the required cuts of timber and deals. No other European nation had the twin resources of forests and power – whether water or wind - to drive sawmills. The Dutch adopted the sawmill technology for wind power, but had no domestic forests; the Baltic countries had timber, but were reluctant to implement sawmills until much

² See pp. 41-47 Figures 6- 9.

³ The Dundee Shipping List Database, Dundee City Archives (2005) and also A.H. Millar, *The Compt Buik of David Wedderburne, Merchant of Dundee 1587-1630*.

⁴ Bang and Korst, (eds.) *Tabeller over Skibsfart og Varetransport gennem Øresund 1497-1660*.

⁵ The Dundee Shipping List Database, Dundee City Archives (2005).

later in the seventeenth century.⁶ There is some evidence of sawmills in Scotland, usually in remote areas, indicating that there was little native timber suitable for processing in this way.⁷ The timber purchased by Baine from the Balnagown estate, for example, shows that although native timber could be used for building works on occasion, it was used primarily when Norwegian timber had become less accessible, resulting in shortages of supply - such as that experienced at Glamis in the 1670s.⁸ Nonetheless, deals from native timber alone would never have been able to meet the growing demand for construction materials, and domestic forests could not compete with either the quantity or quality of output from the Norwegian forest-farms equipped with water driven sawmills.

The toll records from Sunnhordland and Nedstrand⁹ have shown that from the late sixteenth century onwards, the most frequent visitors to collect timber from these localities of western Norway were skippers from the east coast of Scotland. This supports both Bugge's¹⁰ and Lillehammer's¹¹ conclusions, but also establishes an earlier start to a pattern observed by Smout in the late seventeenth century.¹² This trend is further substantiated by several examples of Scottish merchants and skippers operating throughout the seventeenth century, all of whom were concerned with importing timber from Sunnhordland, Ryfylke and other Norwegian districts. The trade relied on these men having not only a sound knowledge and understanding of Norwegian waters, but also having widespread personal networks for carrying out their business transactions with Norwegian forest-farmers and sawmill owners. Their voyages often involved visiting several different locations to obtain specific timber requirements requested directly by ship-owners and merchants. An enduring legacy of this timber trade was the

⁶ Jan de Vries and Ad van der Woude, *First Modern Economy: success, failure and perseverance of the Dutch economy, 1500-1815* pp. 301 and 378; Sven-Erik Åström, 'Technology and timber exports from the Gulf of Finland, 1661-1740,' pp. 1-14.

⁷ Loudon Anderson, *A History of Scottish Forestry*, pp 315-332.

⁸ NRA 855/198/6/22

⁹ Nedstrand toll lists; A. Næss, 'Sagbruk i Søndhordland indtil 1750' [Sawmills in Sunnhordland until 1750].

¹⁰ Bugge, *Den norske trælasthandels historie*, (Vol.I&II), [The History of the Norwegian Timber Trade] (Skien, 1925)

¹¹ See Bibliography for extensive list of publications by Lillehammer.

¹² Smout, *Scottish Trade on the Eve of the Union 1660-1707*; 'Some problems of timber supply in later seventeenth century Scotland'; *Scotland and Europe 1200-1850* and 'The Norwegian Timber Trade from the Scottish Perspective'.

adoption of place names in Norway associated with Scotland, and perhaps more importantly, the timber trade of this period continues to be known as *skottehandelen* - the Scottish Trade - a distinct reminder of the Scots' domination.

The shipping records from both Dundee and Norway indicate that the dimensions in greatest demand were nine and twelve ell lengths of timber baulks/beams, which correspond convincingly with the dimensions of timbers found *in situ* at two rare surviving examples of seventeenth century urban buildings - namely Gardyne's Land, Dundee and Sailor's Walk, Kirkcaldy. However, a clearer understanding of the content of timber cargoes being collected by Scottish skippers from Norway has now emerged, supporting Hanke's theory that Scottish wrights relied on a selection of imported pre-shaped timbers for roof construction.¹³

Of even more significance for Scottish architecture was that Norwegian timber provided builders with longer spans for structural work, allowing buildings to be constructed beyond the limitation of 20 foot spans of earlier stone vaulted buildings.¹⁴ At Gardyne's Land in Dundee, this resulted in a wider building span reaching almost 24 feet, whereas the widest span at Panmure House was 27 feet. Older properties such as Castle Lyon and Brechin were also modified to take advantage of this development, and room sizes were increased by cutting back walls by at least three feet, and in some cases up to five feet. At Brechin, narrow stone vaults were dismantled and replaced with wooden joists to carry the broader floor above. Houses could thus become as wide as those in England.¹⁵

There is a strong likelihood that merchants purchased all the necessary constituent parts required for roof construction directly from Norway, and the timber needed for a roof such as that of Gardyne's Land, for example, could have been shipped in one or two cargoes depending on the size of the vessel. It was not only possible to purchase the required individual components entirely in batches of pre-shaped or sized timbers; the evidence also points to

¹³ Thorsten Hanke, 'The Development of Roof carpentry in south east Scotland until 1647,' M.Phil. diss., University of Edinburgh, 2005, p.109.

¹⁴ Deborah Howard, *Scottish Architecture from the Reformation to the Restoration, 1560-1660* p.68 and McKean, *Scottish Chateau*, p.66-67.

¹⁵ Salzman, *Building in England*, p.238.

occasions when a complete bespoke roof structure was commissioned directly from Norway - as in the case at Methven (1681)¹⁶ and a strong possibility at Panmure (1668). Such precision necessitated the measuring of buildings in feet rather than ells, so that skippers buying more precisely dimensioned timber could not only organise for any trimming to size prior to departure, but reduce wasted space in the hold, and make the building process more efficient on site. The completed frame would have been assembled, marked and dismantled prior to the voyage back to Scotland; the roof at Methven shows evidence of positioning marks, which are likely to have been inscribed by carpenters in Norway.

This later use of the foot as the unit of measurement was probably the consequence of the adoption in 1661¹⁷ of the official Scottish ell length of 94cm, 30 cm longer than not only the Norwegian ell, but also longer than the ells used by most other European countries trading with Scotland. Such wide variation in measurements increased the possibility of mistakes when ordering goods from abroad, as was the case when Bruce ordered leather hangings in the 1670s only to find that they were too short because the measurements had been in Scottish ells, whereas the hangings were ordered and made in the Netherlands to Dutch ells.¹⁸ That the timbers bought from Norway by Strathmore for building works at Glamis were cut and trimmed on site was probably symptomatic of the difficulties of modifying an older building, as Strathmore had discovered to his cost at Castle Lyon when, after thinning back walls to create wider rooms, the pre-sized timber joists were found to be too short.

The emergence of this new source of building timber from Norway had a significant impact on the organisation of the building industry in Scotland in that using pre-sized and processed timbers increased efficiency, and reduced both labour costs and dependency on the services of sawyers. For the patrons, it meant faster and more economical construction. There is clear evidence that the larger timber baulks from Norway were processed further into narrower

¹⁶ Letter from Anne Keith to her husband Patrick Smythe 1681, Perth Museum and Gallery Archive 873 (Box 449).

¹⁷ R.D.Connor, A.D.C.Simpson, and A.D.Morrison-Low (ed), *Weights and Measures in Scotland*, p. 35.

¹⁸ Pers. Comm. Charles Wemyss re: William Bruce ordering leather hangings that were too short because they were made using Dutch ells, not Scots ells.

joists or rafters as identified by Walker¹⁹ by wrights on site. However, the implications for sawyers were generally catastrophic. Sawyers' guilds in the Netherlands had obstructed the building of sawmills and ensured severe restrictions were placed on processed timber imports,²⁰ and a similarly defensive stance may in part have been responsible for the slow uptake of sawmills in Scotland's urban areas. This is a subject worthy of further study.

The adoption of wider spans and greater application of timber was apparent in all buildings examined in this study. Roofs required not only structural timbers (rafters, tie beams, collar beams, and ashlar posts), but also sarking and laths to support slates, tiles and plaster ceilings, each process requiring different techniques. Wider spans allowed for larger buildings with wider (and possibly more) rooms; all needing flooring, panelling, doors, casement (and later also sash) windows, shutters, partitions, plaster ceilings, and furniture. Clearly this required expertise and advanced technical knowledge from wrights, and at Panmure, Glamis and Brechin, the wrights' work became central to the construction process. This in turn enhanced the status and influence of wrights amongst the building trades, and challenged the traditional prominence of the mason craft in the construction of great houses.

Such a shift within the traditional hierarchy of the building crafts is evident from the records of Mary's Chapel in Edinburgh, where the numbers of wrights constituted 50% of the total membership by the mid-seventeenth century and had doubled again by the end, whereas there was little or no change in the numbers of masons, at only 14% of the total membership.²¹ Similar trends were apparent in the trade incorporations of both Dundee and Perth,²² where demand for the skills of master wrights rose continuously during the course of the seventeenth century. Since it was compulsory to become a burghess in order to be accepted as a master wright, and a burghess position brought trading privileges, that meant that the wrights had the

¹⁹ Walker, 'The use of the Scottish National Dictionaries in the Study of Traditional Construction,' pp. 153-177.

²⁰ de Vries, and van der Woude, *First Modern Economy*, p.301.

²¹ The Minute Books of Mary's Chapel, Edinburgh City Archives: SL34/1/1-3.

²² L.W.S. Petznick, 'The Wright Incorporation of Perth Minute Books 1700-1840,'; D. Stevenson, *The First Freemasons: Scotland's Early Lodges and their Members*, and *The Origins of Freemasonry: Scotland's Century 1590-1710*; A. Smith, *The Three United Trades of Dundee: Masons, Wrights and Slaters*, and A.J.Warden, *The Burgh Laws of Dundee, with the history, statutes, and proceedings of the Guild of Merchants and Fraternitie of Craftsmen*.

opportunity to develop business interests beyond their craft; and that is exactly how James Baine prospered.²³

Baine emerged quite rapidly to become the most prestigious member of his craft in the country, working for the Crown whilst undertaking building works at many great houses belonging to some of the most powerful members of the Scottish nobility. However, until now his career had never been examined in any detail²⁴ and although mentioned in Mylne's study of master masons to the Crown,²⁵ very little was known about him. We now know that Baine became more powerful and influential than any of his predecessors, involved in at least twenty major building projects during his career, including some of the greatest houses in the land - Pinkie, Yester, Glamis, Castle Lyon, Panmure, Brechin, Dunkeld, and Thirlestane, as well as the royal palaces at Holyrood, Edinburgh Castle, Stirling Castle, and the Bass Rock. The documented value of his timber stockpile also indicated his wealth and standing as a merchant. It is not clear what his original source of capital to allow him to stockpile timber may have been, but it could have been well-connected kin. The acquisition of Baine and his timber for the Crown building works at Holyrood constituted a major coup for Lauderdale and the Treasury Commissioners. Moreover, the nature of Baine's employment at the three major Scottish houses exemplified the growing status of wrights, for he was master wright at Panmure, became main contractor at Glamis, and finally rose to be master of works and possibly architect with authority and responsibility for all the building trades at Brechin.

The analysis of Panmure House constitutes the first comprehensive examination of the house as it was built on the site of the earlier house of Boishen. The earl of Panmure's motivation to build was driven by the need to signal the family's recently elevated status, together with the desire to re-affirm nearby Panmure Castle as their ancient paternal seat, and the new house designed by John Mylne had the innovative features of wider spans, broken jointed flooring and, perhaps more radical, a semi-subterranean basement that may have been

²³ The Minute Books of Mary's Chapel, Edinburgh City Archives: SL34/1/1-3.

²⁴ Bamford, *Dictionary of Edinburgh Wrights and Furniture Makers, 1660-1840*, p.41.

²⁵ R.Mylne, *Master Masons to the Crown of Scotland and their Works*.

inspired by an English example.²⁶ The extensive building accounts and contracts afford the opportunity both to establish a detailed chronology of the building works and to itemise the timber components required for its completion. Baine was responsible for the roof structures, flooring, doors, windows, panelling, plasterwork and the great stair. Panmure was responsible by contract for supplying the timber, and two cargoes carrying roof timbers arrived at Dundee from Norway, with Baine supplementing it with timber from his own timber yard at Leith as required. Thus, employing Baine served the dual purpose of not only employing the foremost wright in the country, but also of having access to Baine's stockpiles of timber should that limited commodity ever become difficult to source. Panmure could always rely on Baine to prevent the accumulation of costly penalties as outlined in the contracts.

The earl of Strathmore undertook the sourcing of timber from Norway for Glamis himself and, deciding to dispense with the services of an architect (claiming his plans were far too modest), set about creating a balanced and regular building at Glamis to his own design.²⁷ His main concern was to restore his family's former dignity and financial standing amongst his peers. His financial limitations dictated that he carried out his long term design strategy in a piecemeal fashion, albeit he employed whenever possible the most prestigious craftsmen available in the country. This included Baine, who was at the height of his career at the time, operating as both a wealthy timber merchant and master wright.

The work undertaken by Baine was very similar to his work at Panmure, although it also included many pieces of furniture for Strathmore which, given that he was king's master wright, were probably of the finest quality. Furthermore, Baine sourced high quality goods from other craftsmen, such as weather vanes and copper globes gilded with English gold. At a more mundane level, he also made a whole range of tools and equipment and supplied building materials for other craftsmen. However, the key point about Baine's operations at Glamis was that by contracting with Strathmore for the provision of craftsmen and materials far beyond

²⁶ Charles Wemyss, 'Some Aspects of Scottish country house construction', pp. 31-33.

²⁷ Patrick Lyon, 1st Earl of Strathmore, 1642-1695. *The Book of Record: a diary written by Patrick first Earl of Strathmore and other documents relating to Glamis Castle, 1684-1689*, A.H. Millar (ed.) *Scottish History Society* 9, (Edinburgh, 1890).

those just needed for wright work, Baine was acting embryonically in the role of a main contractor. Indeed, to have been able to provide such wide ranging services whilst being involved in several different building projects highlights Baine's considerable achievement during the 1670s. His appointment to the position of His Majesty's Master Wright was the high point of his career as a wright, and also coincided with the high point of his career as a timber merchant. Baine's domination of the timber trade in Edinburgh whilst involved in building was an example of vertical forward integration a century before it was thought to exist.²⁸ Whereas Dunbar had identified one or two prosperous building contractors capable of taking responsibility for individual building operations, namely the masons Thomas Wilkie and Robert Mylne,²⁹ Baine can now certainly be considered as a third example, and probably the first wright to do so.

At Glamis, Baine assumed roles normally reserved for those belonging to the traditionally superior mason craft in that he was the superior appointment over the prominent Edinburgh master mason Alexander Nisbet, deacon of Mary's Chapel in 1671, 72 and 92.³⁰ Consequently, previous studies of the building works undertaken at Glamis by Michael Apted³¹ and Harry Slade³² which concentrated almost exclusively on the mason work missed the larger point. Indeed, a good local example of how wrights came to benefit from their increased status and influence can be observed in the career of Andrew Wright who, having trained as a wright under Baine, was able to acquire property in *lieu* of payment for his work at Glamis, to become a minor laird as a result.

Baine's involvement with the building works at Brechin Castle – his final assignment – was clearly much more significant than acknowledged by Dunbar.³³ He was responsible for the addition of a new state apartment and reception hall, effectively transforming Brechin from a summer lodging used for fishing into a great house, possibly intended as the Countess of

²⁸ Thomson, 'The Scottish Timber Trade, 1680-1800,'.

²⁹ Dunbar, 'Some Late Seventeenth Century Building Contracts', p.271-272.

³⁰ The Minute Books of Mary's Chapel, Edinburgh City Archives: SL34/1/1-3.

³¹ M.Apted, 'The Building and other Works of Patrick, 1st Earl of Strathmore at Glamis, 1671-1695'.

³² H.G. Slade, *Glamis Castle*.

³³ D. Walker, and J. Dunbar, 'Brechin Castle, Angus: I', *Country Life* August 12 (1971).

Panmure's jointure-house. Like Strathmore, Panmure chose not to employ an architect, instead employing Baine as 'wright: master of works' with authority over the other trades, and with responsibility for the administration of the entire building operation. However, it was Baine who then engaged and paid local masons for the stonework, designing decorative stonework details for them to execute (some of which survives today), which goes beyond separate trades contracts, as at Panmure, into the role of main contractor. Moreover, Baine also had the ambition to be designer or 'architector' at Brechin, for the evidence strongly indicates his involvement in the direction and design of the building works. His aspirations were apparent not only in his scheme to create balanced facades at Brechin, by making the house more 'uniform and regular',³⁴ but also in his concerns that the house be adequately ornamented for the Panmure family. Hence his many unauthorised embellishments which he clearly considered so good that his client would approve and pay for.

The main intention of this thesis was to explain the interrelationship between Norwegian timber imports and the architecture, building works and their organisation of later seventeenth century Scotland; but one of the most interesting discoveries was how the nature of building organisation in seventeenth century Scotland was changing – in particular the embryonic emergence of the role of main contractor, beyond Dunbar's earlier observations.³⁵ Dunbar focused upon the move away from the system of directly employed labour towards the adoption of contracts with strangers,³⁶ as also observed by Airs in England.³⁷ Under the direct labour system, the builder/owner had undertaken the control of the building operations himself using his own tenants as labour. With the development of contracts, the liability or financial risk associated with building operations was transferred either to an individual tradesman or to

³⁴ NAS GD45/18/1616/24

³⁵ Dunbar, 'Organisation of the Building Industry in Scotland during the 17th century', and Dunbar and Davies, 'Some Late Seventeenth Century Building Contracts'.

³⁶ Dunbar, 'Organisation of the Building Industry in Scotland during the 17th century'; Dunbar and Davies, 'Some Late Seventeenth Century Building Contracts'.

³⁷ Airs, *The Tudor & Jacobean Country House: A building history*, pp. 57-63.

groups of them.³⁸ A senior craftsman was also sometimes appointed as the master of works - a title originally used by medieval officials or clerics overseeing building works for the Crown.³⁹ The relatively recent adoption of contracts, with the appointment of a designer or architect as overseer, meant greater convenience for clients, both in giving them access to non-local craftsmen and in ultimately reducing their risks and liabilities. Contracts covered not only work and workmanship, but also the supply of building materials, sometimes provided by the contractor and sometimes by the client. In the case studies examined here, timber was often the responsibility of the client, who may have employed Scotland's foremost timber merchant – Baine – principally to reduce the risks of failing to meet their contractual obligations. What makes Baine particularly significant, however, is that his contracts at Glamis and Brechin represented a progression – away from separate trades and toward a main contractor – a century or more before this pattern became more common.

There was, however, no clear transition from one system to the next, and elements from both systems of direct labour and contracting were used to varying degrees at Panmure, Glamis and Brechin. For example, after the death of John Mylne, who was initially employed both as architect and mason, his deputy took over the contract for the mason work, whereas all the other trades were contracted out separately, and Panmure's chamberlain took responsibility for the administration of the building operations, more or less as master of works. Baine's role was as wright. At Glamis, where Strathmore undertook the role of architect himself and supplied some of the building materials - particularly timber - he entered into contracts with separate trades and with Baine as his principal contractor or 'headsman' simultaneously. Once the major building works had progressed sufficiently, Strathmore then reverted in part to the direct labour system employing his own estate wright, and local stone masons. At Brechin, Panmure not only employed Baine as master of works to oversee the building works, but also as a main contractor in the modern sense. However, the process exposed many of the pitfalls arising from such a system. When Panmure subsequently replaced Baine's services with those of Tobias Bauchop, a

³⁸ Dunbar, 'Organisation of the Building Industry in Scotland during the 17th century' p.9.

³⁹ Ibid., p.8.

mason/architect, and Alexander Edward, a minister/architect, both men recognised by their contemporaries as architects, it was a sign that Panmure had recognised the emerging significance of architects in the organisation of building works resolving the issue of who was in charge of building works - the client or the professional (whether craftsman, architect or contractor).

It is quite likely that the misunderstandings and contractual disputes between Baine and his patrons were attributable to uncertainties caused by the major re-structuring of building organisation then taking place, for the building case studies illustrate a wide range of contracts. In the matter of design, at Panmure, Mylne was present initially as architect, at Glamis, the client acted as architect, and at Brechin, Baine may have been architect. In the matter of construction, Baine's role evolved from that of a separately contracted tradesman, to main contractor and finally to master of works with authority over all the trades. If the emergence of the contract system in sixteenth century England entailed an increased specialisation in the language and skills required by both client and craftsmen or contractor, as Maurice Howard has suggested,⁴⁰ a similar process in seventeenth century Scotland was still insufficiently developed to prevent misunderstandings and lawsuits. Further research into contracts might reveal more about the evolving terminology used by builders and contractors. The general trend found at all of these buildings, however, certainly supports Dunbar's observations that direct labour had become an outdated mode for the organisation of building construction; and that by the end of the seventeenth century, varying forms of contracts, although not standardised, had become the accepted method for organising building operations. They remained so to the nineteenth century and, to a minor degree, to the late twentieth century. In Baine's specific – and perhaps pioneering – case, however, the experimentation moved beyond separate trades to Baine taking the risk as a main contractor a good century before its time.

The common difficulty arising from such fixed price contracts was inaccurate costing by the contractor (a problem later avoided by measuring work), which Baine encountered at

⁴⁰ Maurice Howard, *The Building of Elizabethan and Jacobean England*, (New Haven and London, 2007) pp.106-109.

Panmure whilst still relatively inexperienced. On realising that his prices were unrealistic, Baine probably tried to recoup his losses from Panmure by claiming for additional work and costs 'not by contract,' which would have created further confusion for any legitimate claim deriving from any client change of mind, or instruction for extra work. No doubt Strathmore had this in mind when he included his rather unreasonable clause refusing to pay for work 'though their omitted', which effectively eliminated his liability for extra costs, whilst giving him free rein to change his plans. Perhaps if he had employed an architect, this clause would have been unnecessary; for it would have prevented the complications arising from, for example, Strathmore's lack of spatial awareness at both Castle Lyon and Glamis. Despite agreeing to a fixed price contract at Brechin, on the one hand, Baine embarked on a series of unauthorised embellishments, whilst on the other, the earl changed his mind during the course of building works. Baine's inherent vulnerability as a contractor was finally exposed at Brechin, when his unauthorised and grandiose building works coincided with the dramatic deterioration of his finances, and several allegations of incompetence. From the evidence of Bauchop's survey, Baine's reaction - perhaps more typical of a modern day contractor - had been to cut corners perhaps in a final, but desperate attempt to balance his books.

Baine's rapid success must have owed much to his strength of personality, combined with a considerable measure of entrepreneurial skill. His early adoption of what became termed 'vertical forward integration' for his timber business confirms a considerably greater level of sophistication in the building industry 100 years earlier than previously appreciated.⁴¹ Though Baine finally overreached himself at Brechin, his failure is worthy of more examination. It is clear that he depended upon the essential requirements of liquidity and reputation, particularly once operating as a main contractor, which meant that he was required to supply goods and materials before being paid by his client - impossible with neither capital nor credit. However, there is no evidence from Panmure, Glamis or Brechin that, whatever the problems, his business was fundamentally flawed. But once it became clear that the Crown had no intention of clearing

⁴¹ Thomson, 'The Scottish Timber Trade, 1680-1800.'

its debts to him for Holyrood, Baine's downfall became inevitable – for all of his stock and, one must presume, much of his capital had been invested in it. In short, it was the Crown that brought Baine down.

It is also worthy of note that the impetus for any further experimentation or significant restructuring of the Scottish construction industry appears to have ceased at this time. The spectacular collapse of Baine's business signalled a return to the former order, with masons the dominant craft. Baine's rise – and that of the wrights as a whole – coincided with the availability of a new and convenient source of exactly specified timber; and this skilled and ambitious wright obtained access to capital to allow him to exploit the opportunity that opened up in the building industry. Unfortunately, he was too trusting in the government and fell for that reason. He was the last Scottish wright to make such a significant impact on the building industry for a century or more.